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AGRICULTURE IN THE SÃO PAULO-NORTHERN PARANÁ REGION . . . . .

By Irwin P. Keeler* and Richard F. Lankenau**

The crisis in the coffee trade and the beginning of the general world depression in 1930 forced São Paulo, the chief coffee-growing area in the world, to turn to more diversified agricultural production. Though coffee remains the principal crop, its proportion of total agricultural production has been greatly reduced, while production of other crops, principally cotton, has greatly increased. Chiefly responsible for this success have been government aid to growers, the opening up of new lands to cultivation, the encouragement of immigration of agricultural workers, improvement of transportation facilities, and the ability to market new crops.

Agriculture has always been Brazil's most important activity, but unfortunately it was for many years essentially a single-crop industry, producing first sugar and then coffee. The last 15 years, however, have witnessed an intensive reform of Brazilian agriculture. Special attention has been devoted to the diversification of agricultural production and to technical improvement in agricultural methods, with the result that Brazil has been able to free herself entirely from her one-crop handicap.

Indicative of the progress in diversification has been the steadily decreasing importance of coffee and the increased importance of other crops in the total value of agricultural production. Progress in agricultural methods is indicated by the increased imports of agricultural machinery and the manufacture of such equipment within the country. With regard to the livestock industry, the number of reproducers imported and the production of meat, milk, and dairy products have increased significantly.

The most important single agricultural area responsible for this effective diversification has been the region comprising the State of São Paulo and the northern part of the State of Paraná. The object of this study is a review of the agriculture of this region in the light of its recent progress and future possibility.

Comments on the current crop and livestock situation in São Paulo and northern Paraná are based on observations and information collected on a trip through this region, taken with a view to observing representative farm and livestock areas, including the new areas in western São Paulo and northern Paraná. Particular attention is devoted to the cotton situation in view of its special interest to the United States.

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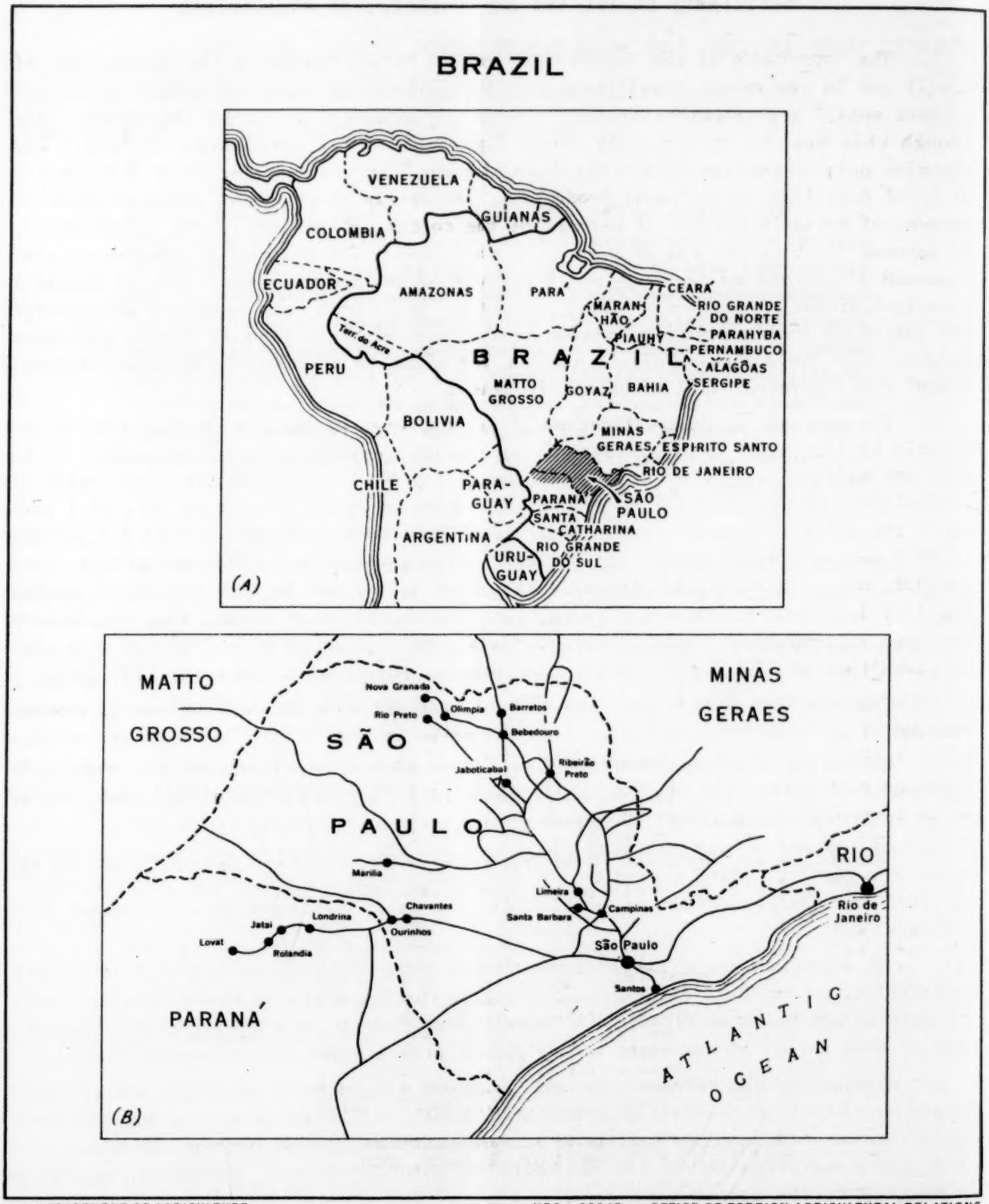

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Figure 1.-*(A)* Brazil, showing area considered in the report; *(B)* agricultural centers of São Paulo and Northern Parana, showing railway connections.

IMPORTANCE OF THE REGION IN BRAZILIAN AGRICULTURE

The importance of the São Paulo-Northern Paraná region in the agriculture of Brazil and in the recent developments in diversification may be ascribed to its excellent soil,[1] its temperate climate, and the progressive spirit of its people. Although this section covers only about 3 percent of the total area of Brazil and contains only 16 percent of the total population,[2] it accounts for about 50 percent of total Brazilian agricultural production. It has in recent years produced about 70 percent of Brazil's coffee, 65 percent of the cotton, 40 percent of the citrus fruit, 25 percent of the corn, and 20 percent of the beans. The State of São Paulo has also produced 15 percent of the hogs and 8 percent of the cattle, and is one of Brazil's principal producing centers of dairy products. It is even more important as a center for fattening cattle from the northwestern states of Matto Grosso, Goyaz, and Minas Geraes. São Paulo packing plants account for about 60 percent of the total "frigorífico" (refrigerated) kill of cattle in Brazil.

The progress in diversification of agricultural production in this area is indicated by the trend in production of various crops (tabulation below; table 1). In 1925 the value of coffee production accounted for 68.9 percent of the total value of agricultural production, but by 1938 this proportion had decreased to only 37.5 percent. The value of cotton production increased during the same period from 5.3 percent to 28.5 percent of the total. In volume, coffee production in 1939 was greater than in 1925, but it has declined steadily in recent years, and in 1939 had about reached the 1930 level. Other important crops, with the exception of beans, show considerable increase in production since 1930; São Paulo cotton production in 1939 was more than 30 times that of 1930, and production of oranges more than 6 times the 1930 level.

This region has also been playing an important part in the program for the expansion of agricultural production into new areas in Brazil. The northern and western part of São Paulo and the northern part of Paraná have been settled and put under cultivation within the past decade. Railroad lines have also been extended into the new areas to provide easy access to markets.

The following tabulation shows the value of principal agricultural crops in São Paulo in 1925 and 1938 as percentages of the total value:

	1925	*1938*
Coffee	68.9	37.5
Cotton, raw	5.3	28.5
Corn	9.5	9.7
Rice	6.3	8.3
Mandioca flour	.5	.7
Cane sugar	4.8	3.5
Oranges	.2	4.9
Beans	3.1	2.6
Others	1.4	4.3
Total	100.0	100.0

Brazil, 1939-40, Ministry of Foreign Affairs, Rio de Janeiro; *Annual Statistical Report of São Paulo, 1925.*

[1] The soil of São Paulo has been characterized by a Brazilian soil specialist as "chemically poor but physically excellent." Though extremely friable, a large percentage of silt and clay gives the soil a high water-holding capacity and very little leaching occurs. All soils are red or violet in color.

[2] In 1939 the population of Brazil was officially estimated at 45,002,176; of São Paulo, 7,305,407. The area of São Paulo covers 95,458 square miles, or about 61,093,000 acres.

TABLE 1.—*Production of principal agricultural crops in São Paulo and Brazil, for specified years*

COMMODITY	REGION	1925	1930	1937	1938	1939
		1,000 short tons	*1,000 short tons*	*1,000 short tons*	*1,000 short tons*	*1,000 short tons*
Coffee	São Paulo	573	912	1,038	976	926
	Other Brazil	364	522	449	486	534
	Total	937	1,434	1,487	1,462	1,460
Cotton, raw	São Paulo	34	9	223	274	301
	Other Brazil	111	136	223	207	172
	Total	145	145	446	481	473
Corn	São Paulo	1,132	1,424	1,323	1,653	1,650
	Other Brazil	3,396	3,445	5,068	5,050	4,890
	Total	4,528	4,869	6,391	6,703	6,540
Rice	São Paulo	304	476	529	569	600
	Other Brazil	499	578	844	894	1,056
	Total	803	1,054	1,373	1,463	1,656
Mandioca flour	São Paulo	33	54	93	79	83
	Other Brazil	845	881	934	971	1,108
	Total	878	935	1,027	1,050	1,191
Cane sugar	São Paulo	139	66	181	164	185
	Other Brazil	778	1,059	855	889	1,053
	Total	917	1,125	1,036	1,053	1,238
Oranges	São Paulo	64	99	647	625	604
	Other Brazil	95	377	780	739	772
	Total	159	476	1,427	1,364	1,376
Beans	São Paulo	198	289	198	205	206
	Other Brazil	437	438	733	715	658
	Total	635	727	931	920	864

Compiled from official sources.

PRINCIPAL AREAS

The principal areas considered in this survey are Campinas-Santa Barbara in east-central São Paulo; Ribeirão Preto in north-central São Paulo, near the Minas Geraes border; Barretos, north of Ribeirão Preto; Marilia, the newly settled area in western São Paulo; and the new area about Londrina in northern Paraná.

Campinas-Santa Barbara

This is one of the older farming areas in São Paulo, and was one of the first major coffee-producing districts in the State. It now may be described as primarily a general farming area, producing cotton, corn, coffee, sugar cane, oranges, and food crops such as rice, beans, and mandioca (cassava). Cotton is probably the leading cash crop in the area at present. In addition, there is a considerable livestock industry, producing cattle, dairy products, and hogs for the São Paulo market.

This area is one of the most productive in the State, but much of the land has been cropped for many years, with very little rotation, and now requires fertilizer to produce satisfactory yields of crops such as cotton.[3] Excellent rail transportation facilities, proximity to the São Paulo market, and the relatively low cost of farm labor have contributed to the development of general farming in this area, and to its continued importance as an agricultural region despite the competition of newer and cheaper land in the western part of the State.

Prices of land in this area have shown a sharp advance since the early 1930's, apparently as a result of increased cotton production at favorable prices, as well as favorable prices for livestock and food crops. Lands which sold for about $6.50 an acre in 1932 are now commanding prices of about $30.00 an acre.

Ribeirão Preto

The Ribeirão Preto area is one of the older coffee-growing areas of São Paulo. In recent years this region has abandoned coffee to some extent and has expanded the production of cotton. The soils are considered among the best in São Paulo, giving good yields of coffee, cotton, and corn, without fertilizer. The shift in production from coffee to cotton has brought with it a division of large land holdings into smaller farms of about 120 acres.

Barretos

This area is chiefly in pasture land, but some owners frequently rent such lands to farmers for a few years to get the pasture cleaned and also to derive income therefrom. Much of the soil in the immediate vicinity of the town of Barretos and a narrow strip of land extending northward to the border of Minas Geraes is quite sandy and will probably remain in pasture and brush land. The best grazing lands and good farming lands are found to the east and west of this sandy strip.

Marilia

The area about Marilia is one of the newer coffee- and cotton-growing districts of São Paulo, and has shown remarkable development in the past 10 years. The town of Marilia is only 15 years old and has a population of 20,000, while the municipality of Marilia contains 80,000 inhabitants. Twenty years ago this area consisted virtually of uninhabited forest land.

[3] In this connection it may be added that phosphorous represents the principal deficiency of the soils of São Paulo that have been farmed for many years, such as those in the Campinas-Santa Barbara area.

The Japanese have been important in the settlement of Marilia. A Japanese-controlled land company administers a large tract of land in this area and finances the sale of land to settlers. The land is sold in lots of about 60 acres at a price of from $3.35 to $6.60 per acre, payment (without interest) to be made over a period of 10 years. With the rapid agricultural expansion in the west, land prices have risen considerably in recent months.

The soil of this area produces good yields in several crops, but shows a high percentage of sand and appears to be much more susceptible to erosion and exhaustion than the soils of Ribeirão Preto. The extreme friability of the soil, which absorbs water rapidly, seems to make erosion much slower than would be expected on first observation, and grass and vegetation spring up rapidly if the land is left idle. It appears, however, that unless efforts are made toward soil conservation and erosion control, this land will probably be turned to pasture within a decade or two.

Northern Paraná

The region extending from Ourinhos, near the São Paulo-Parana border, to Londrina and Lovat in Paraná is a rapidly developing new farm area. This newly developed part of the State of Paraná is really an extension of the São Paulo agricultural district and is therefore considered along with the various areas in the State of São Paulo. Most of this area, like the Marilia area to the north, was an undeveloped and almost uninhabited forest region only a few years ago. The town of Londrina, founded in 1932, now has a population of 15,000. Principal crops grown are coffee and corn, though many other crops are also produced and considerable numbers of hogs are raised.

The western part of the North Parana area, around Londrina, is primarily an area of small landholdings, settled by immigrants of chiefly Central and North European origin. The immigrants engage in general farming, principally in the raising of food crops and hogs, but as a rule do not like cotton farming.

Londrina is the headquarters of a large British-owned land company, which some years ago purchased 3 million acres of undeveloped forest land to the west of Londrina. This land is being sold to settlers in small plots, the average size being about 78 acres; to date some 400,000 acres have been sold. Prices average about $5.00 per acre. Payments are spread over five years, with interest at 8 percent on the unpaid balance.

To the east and southeast of Londrina lies the cotton area. Japanese, Brazilians, and South Europeans are the chief settlers. Small farms are the general rule. Farther east, land holdings are larger and coffee is the main crop. The soil is very good and yields are generally higher than in the old coffee areas in São Paulo.

The area as a whole shows great promise of increasing importance in Brazilian agriculture.

PRINCIPAL CROPS

The principal crops grown in the São Paulo-Northern Parana region are, in the order of their importance, coffee, cotton, corn, rice, citrus fruits, sugar cane, beans, and mandioca. The coffee crop is most important from the standpoint of

production value, but the production of coffee is being abandoned in many areas in favor of other crops. The most rapidly increasing crop is cotton, but increased production of many other crops has also been evidenced.

Coffee

As recently as the period of 1928-1932, coffee accounted for 71 percent of the total value of agricultural production in São Paulo. Although this proportion was reduced to 37 percent by 1939, due to increased production of other crops and abandonment or destruction of many coffee trees, coffee remains the principal agricultural crop.

The abandonment of many old coffee lands has been partly offset by the opening up of new lands in western São Paulo. The intensification of production on these new lands will insure the future position of coffee as a leading agricultural crop.

The principal municipalities producing coffee are Ribeirão Preto, Marilia, Campinas-Santa Barbara, and Northern Parana. The Ribeirão Preto area is one of the older coffee regions, traditionally considered as producing some of the finest qualities of coffee. The old trees are not generally being replaced, however, and in many cases they have been destroyed and the land put to other uses. The number of coffee trees has declined from 36 million to 10 million within the last few years, and it is likely that the drought of last year will cause a further reduction. The soil of the area is considered among the richest in the state, and the shift from coffee to other crops has therefore been successful.

An interesting feature of the old coffee lands is the common practice of planting cotton, corn, beans, or rice between the rows of coffee trees. This practice is particularly prevalent in the case of coffee plantations that are past their prime, where the trees will probably be removed at an early date, and of the new coffee plantations in the Marilia and Londrina areas for the first three or four years after planting the trees. Planters recognize, however, that the practice adversely affects the trees and yields, and it is not generally followed in the case of plantations of an economic bearing age.

The new coffee lands in Marilia and Northern Parana have been in use about 15 years. The soil is rich and yields are good, being much higher than in the older areas. This section is expected to become an increasingly important factor in Brazilian coffee production when recent plantings reach a commercial bearing stage.

The coming crop of coffee will be only about 35 percent of average production in recent years. It is expected that only 5 to 6 million bags will be produced, in contrast to some 15 million for previous crops in recent years. The short crop is the direct result of the severe drought of May to September 1940, which will probably also affect the 1942 crop.

Coffee prices have improved considerably due to the short crop and also in anticipation of the effects of the coffee quota system in the United States. Farmers holding good-quality coffee from last year's crop expect to realize a substantial profit from the sale of these stocks. The short coffee crop should contribute to the attainment of an equilibrium in supply and demand, which has been a government objective since 1930. In addition, the usual adverse economic conditions in this

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section following a short coffee crop are expected to be offset somewhat by the increased production of other crops.

Since 1937 Brazil has been following a so-called "competition policy" to increase her coffee exports. Under this policy the export tax was reduced by 75 percent, and the result was a considerable increase in exports in 1938 and 1939. The outbreak of the European war, however, created difficulties. The European market, which had been taking 30 percent of Brazil's coffee exports, was lost or extremely restricted. Blockades and rationing systems were affecting belligerents and neutrals alike. The United States is the only remaining market where coffee enters duty-free. United States imports have increased considerably in the past three years, but not to the extent of replacing the European market. However, the prospect of the piling up of a large surplus production has been eliminated for the immediate future by the effects of the severe drought in 1940, which will greatly reduce the 1941 crop and probably also the crop of 1942.

Cotton

Until 1930 cotton production in Brazil was relatively unimportant. Up to that time, cotton had been grown only in districts where coffee did not flourish. From 1930, however, new fields were opened to the cultivation of cotton, because of the crisis in the coffee trade and the general world depression. Even agricultural states that were well organized commercially, such as São Paulo, looked to the opening of extensive cotton cultivation as the only means to soften the blow caused by the collapse of coffee prices. Accordingly there began the period of cotton economy characteristic of Brazil, and especially São Paulo, today.

The increase in the production of lint cotton in São Paulo during the past decade has been phenomenal. Production in 1930 amounted to only 18,400 bales, or 4 percent of Brazilian production. This tremendous increase has raised Brazil to fourth position among the cotton-producing nations of the world. Exports from São Paulo increased from 261 bales in 1930, or less than 1 percent of Brazilian cotton exports, to 1,198,300 bales in 1939, or 80 percent.

Causes other than the coffee crisis that aided the increase in cotton production in São Paulo were (1) expert agricultural and commercial supervision; (2) improved transportation; (3) a favorable distribution of population; (4) abundance and availability of interior markets; (5) an exchange rate favorable to production; (6) a favorable period for harvest and export; (7) new immigration; and (8) improved ginning machinery. Technical supervision has assured farmers a sufficient quantity of selected seeds, providing greater yields;[4] it has provided an excellent organization for classification of the crop, thus insuring better distribution in domestic and foreign markets; and it has provided a chain of banks and commercial houses to insure credit facilities. Improved highways and increased railway facilities have aided in marketing the crop, and the even distribution of the State's population has enabled planting and picking without difficulties.

[4] The Government of São Paulo distributes planting seed from farms on which it is grown under State supervision. Purity of selected varieties is maintained by enforcement of the law requiring all farmers to purchase seed from the State. Government experiment stations are constantly striving to improve both varieties of plants and methods of cultivation.

Because of abundant and available interior markets, the small cotton grower can always dispose of his crop and receive immediate compensation; sale of the São Paulo crop is also enhanced by the fact that harvesting occurs between May and August, a period that meets little competition from the United States crop. New waves of immigrants, especially the Japanese, have aided the advance of cotton by their interest in its cultivation. On the other hand, new markets in Japan and China have been opened to São Paulo cotton. Finally, vast improvements in ginning machinery have resulted in an improvement in the quality of Brazilian cotton.

The principal cotton-producing municipalities in the São Paulo area are Campinas-Santa Barbara, Ribeirão Preto, Marilia, Joboticabal, and Northern Paraná.

Cotton is grown in the Campinas-Santa Barbara section on land that has been in use for many years and therefore requires fertilizers to obtain a satisfactory yield. Only about 10 percent of the cotton grown in São Paulo is grown with fertilizers, and the bulk of this is grown in the Campinas-Santa Barbara section. Very little crop rotation is practiced, one farmer having planted cotton on the same land for eight years, using about 500 pounds of bone-meal to the acre (at a cost of $1.25 per 100 pounds). Low labor costs have enabled the farmers to continue growing cotton on these old areas at little expense.[5] Production in the Campinas-Santa Barbara area increased from 17,443 bales in 1932-33 to 69,419 bales in 1938-39.

In the Ribeirão Preto area, cotton is being planted on old coffee lands, and yields are being realized of 300 to 350 pounds of lint cotton per acre, without fertilizer. Production of cotton in this area increased from 4,687 bales in 1932-33 to 20,774 bales in 1938-39. This shift from coffee to cotton has caused the large estates to be broken up and sold in smaller parcels of about 120 acres. Most of the purchasers are former tenants, who grew cotton on a cash-rent or share-crop basis.

One of the fastest-growing cotton areas lies in the vicinity of Jaboticabal, west of Ribeirão Preto. Here production has increased from 1,109 bales in 1932-33 to 32,218 bales in 1938-39. Much of the cotton in this area is produced on former pasture land, but cotton production is also of importance[6] on land formerly devoted to other crops and on woodland that has been cleared since the beginning of the cotton boom.

Temporary cotton land is found around Olimpia and Nova Granada, west of Barretos, where owners of pasture land rent to cotton farmers for three or four years with a view of obtaining cash income and of having the pastures cleaned. Similar arrangements apply to woodland, which after being cleared and planted to cotton for some years will be converted to pasture land. Rental of these lands ranges from $1.70 to more than $2.00 an acre. Output in this area has greatly increased in recent years, Olimpia having increased production from 97 bales in 1934-35 to 17,710 in 1938-39, and Nova Granada from 800 bales in 1932-33 to 25,263 in 1938-39.

The area about Marilia is one of the newer cotton-growing districts, and has developed remarkably since the beginning of the cotton boom in 1932. Cotton production

[5] The usual wage rate is 20 to 30 cents a day, in addition to living quarters and a plot of land on which to raise food.

[6] The importance of cotton as a cash crop is further indicated by the fact that it is sometimes seen planted in former garden and pasture plots and even along the roadways between the the fields and road.

in this area, which includes Marilia, Vera Cruz, Pompeia, and Tupan, increased from 2,006 bales in 1933-34 to 129,444 in 1938-39.

In this area cotton is grown almost entirely on former brush and timber land, which has been cleared for the express purpose of planting this crop. Yields have been satisfactory during the few years the land has been cropped. To the northwest of Marilia, the clearing of new land is continuing on an important scale and is preceding the extension of railway lines. Two cotton gins are already under construction at points beyond the last railway stop.

Japanese colonists constitute an important factor in cotton production in the new areas in northwestern Paraná and particularly in the Marilia area. Official statistics relating to cotton seed distribution by nationalities show that 67 percent of the seed sold for planting in Marilia for the 1939-40 crop was purchased by Japanese. The municipality of Tupan is the center of Japanese interests in the Marilia area.

Another new cotton-producing area is located in Northern Paraná. Most of the cotton production in this area is in the district east and southeast of the town of Londrina, near Jataí. The crop is grown chiefly by Japanese, Brazilian, and South European settlers. The future possibility of cotton production in this area is uncertain. Thus far, output has been relatively low, the total production in 1939-40 being estimated at only 24,840 bales. New lands to the west, still in forest, may be developed into cotton-growing areas, but as yet little is known of the climatic and other conditions that would affect cotton-growing.

Three principal factors have thus far operated against greater attention to cotton in the areas of Northern Paraná: (1) the large percentage of Central and North European immigrants among the farm population, who prefer to grow crops other than cotton; (2) remunerative prices received for food crops; and (3) the common belief that newly cleared forest land is too strong for cotton (that is, as a result of excessive quantities of nitrogen in the new soil the plant produces excessive vegetation). All these factors are, of course, subject to change over a long period, and it has not infrequently been stated that Northern Paraná is likely to occupy an increasingly important place in Brazilian cotton production.

A record-breaking cotton crop is expected in São Paulo this season, estimated at from 1,656,000 to 1,840,000 bales, a considerable increase over last year's crop of 1,403,000 bales. The anticipated increase is partly a result of increased plantings and partly of unusually favorable weather conditions during the planting and growing season. The prospect of a short coffee crop and the profit realized from last year's cotton crop led to the increased cotton planting this year. Prices received by farmers in 1940 for seed cotton at gins in São Paulo averaged 2.23 cents per pound, whereas offers this year by ginners have not exceeded 1.58 cents per pound.

The outlook for the disposal of the current record-breaking crop is uncertain and is causing some concern. It is believed, however, that the lower price of São Paulo cotton as compared to United States cotton is likely to find favor in the cotton import markets yet existing. A greater volume of sales to the United Kingdom and the Far East is anticipated, which will aid considerably in the disposal of the crop.

In view of the large crop and the unsettled condition of the export market, São Paulo cotton interests have asked governmental financial aid in the form of cotton loans at specified levels to São Paulo merchants and producers.[7]

Corn

Corn is grown primarily for the feeding of draft stock and hogs, but in recent years it has also been grown in considerable quantity for the export market. Many varieties are grown, but they are usually classified as "hard" and "soft" types. The hard type is preferred for export purposes because its greater resistance to heat and humidity enables it to stand shipment better. The soft types are in demand as forage for cattle because of their higher nutritive value.

São Paulo produces about 25 percent of the Brazilian corn crop, production in the last decade averaging about 1.3 million tons annually. Production in 1940 is estimated at 1.5 million tons.

Corn is grown principally in the Ribeirão Preto area, where it ranks third, after cotton and coffee, as a cash crop,[8] and to some extent also in the Campinas-Santa Barbara and Northern Paraná districts. The extensive scientific attention and high degree of government intervention characteristic of cotton production in São Paulo have not yet been extended to corn, and yields are therefore not so high as might be expected. As a general rule the plant is of tall, vigorous growth, but the grain yield is not in keeping with its size and rankness.

On a good farm in this area corn yields are the equivalent of about 28 bushels per acre if grown without fertilizer, and 46 bushels per acre with fertilizer. An improvement in yields will depend on the development of new varieties, especially adapted to soil and climatic conditions, that would have a lesser tendency to go to stalk than the variety now planted. Work is being carried on by the Instituto Agronómico at Campinas and at various substations, with a view to the development of good hybrids and improved open-pollinated varieties.

In view of the export possibilities that appeared in recent years in São Paulo the Government acted to eliminate transportation difficulties. The problems included lack of railway facilities, high freight rates, and port loading difficulties. These had arisen from the fact that the harvest of corn coincided with the cotton and coffee harvests, concentrating a demand for freight cars from April to December and creating a shortage of facilities for movement of the corn crop. The port of Santos was likewise congested at this time and found it difficult to facilitate the rapid shipment of corn to foreign markets. Government action included reduction of rail and ocean freight rates, improvements in storage and loading facilities for corn, and reduction or suspension of processing service fees.

The present war has brought several changes in the export trade in corn. Principal markets in 1939 were Belgium, the United Kingdom, Japan, the Netherlands, and

[7] In this connection, the Bank of Brazil has announced that it will advance against warehouse receipts 5.44 cents per pound on lint cotton. Prices on the São Paulo Merchandise Exchange are currently 6.35 cents per pound.

[8] The crop is generally regarded as one bringing a fair return. Prices have declined somewhat with the approach of the new harvest season and are now quoted at $1.03 per bag of 60 kilos (about $0.43 per bushel).

Germany. Only Japan is now an assured market, with shipments to the United Kingdom still possible but greatly reduced. The other European markets have been closed by the British blockade.

Rice

In Brazil, rice, together with beans, constitutes the basis of the human diet.[9] The soil and climate of the country are admirably adapted to the cultivation of this crop, and its production has therefore continually increased. In the past decade Brazil has more than doubled her rice production, and has become the leading producer of this commodity in the Western Hemisphere. Besides meeting increasing consumption requirements, Brazil also increased her volume of exports considerably.

São Paulo produces about 40 percent of the Brazilian crop, production in the past decade averaging over 500,000 tons (24.5 million bushels) annually.

Two distinct varieties of rice are grown: the lowland, or paddy, variety, cultivated in permanently wet soil or irrigated lands; and the upland variety, grown on the plateaus, where it receives only the humidity of the atmosphere and subsoil and rain water. The planting season is in the spring, between September and November. Rice grows quickly, and the usual harvest season is about two months after planting.

Exports of rice are increasing steadily but even in South America have not been able to replace the oriental product. The principal reason for this is the relatively high production cost, due to high rents, scarcity of capital, and limited transportation facilities.

Prices received by growers this season are very favorable. Rice is currently quoted at $3.00 per bag of 60 kilos (about $1.07 per bushel). Increasing industrialization and high levels of industrial and construction activity in the city of São Paulo have contributed to the rise in prices now being received for food crops.

Citrus Fruit

Oranges are the principal citrus fruit of São Paulo, and are chiefly grown in the Campinas-Santa Barbara area. It has been estimated that there are some 9 million citrus trees in São Paulo, of which 87 percent are orange trees, 11 percent grapefruit, and the remaining 2 percent tangerine. The position of this area with respect to producing areas elsewhere is advantageous because of the low cost of land and labor, the fertility of the soil, and a climate especially favorable to citrus cultivation. In addition, the citrus industry is being aided by improved methods of picking, packing, and transportation. Future plans include the construction of a large refrigeration plant at Santos to permit precooling of the fruit, thus insuring a better quality for shipment to foreign markets.

The development of the citrus industry in São Paulo has received its impetus from the export trade. Although prices received have been very low, the low cost of

[9] Rice is used in many ways. Besides being used as a basic food, it is also manufactured into flour. The Government now requires a certain percentage of rice flour to be mixed with wheat flour in making bread. Rice straw is used as forage for horses and rice bran as forage for cattle and poultry; also, various chemical products and beverages, such as rice brandy, are obtained from rice.

production has made it possible for growers to expand their acreage. Exports increased from 16,900 boxes in 1926 to 2,790,653 in 1939.[10]

Production of oranges in the past decade has averaged about 14 million boxes annually. The 1941 crop, however, is expected to be considerably smaller because of the severe drought in 1940, which extended into the first flowering season in September. Estimates place the crop at from 8 to 11 million boxes. Growers, however, have not been greatly disappointed because the United Kingdom, previously the chief market for São Paulo oranges (taking about 2 million boxes annually), is expected to purchase relatively small quantities this year.

Sugar Cane

Although sugar cane has long been one of the leading crops in Brazil, its cultivation in São Paulo has become an important industry only within the past 15 years. production in São Paulo increased from only 10,199 short tons in 1926 to 184,529 short tons in 1939.

Soil and climatic conditions in São Paulo, though not as favorable as in the northern sugar-producing states, are nevertheless satisfactory, and high yields have been obtained. The principal sugar cane area in São Paulo is the Campinas-Santa Barbara area.

Production of sugar in recent years has been considerably in excess of consumption needs. In addition, exports to foreign markets have been declining steadily. Surpluses have not piled up, however, as excess sugar produced has been diverted to the production of alcohol. About 12 million gallons of alcohol were produced in São Paulo in 1939. A deficiency in fuel supplies has thus been overcome, and at the same time the sugar economy has been strengthened.

Beans

Beans, even more than rice, constitute the principal diet of Brazilians, particularly in the rural districts. So large is the local demand that although Brazil is the third largest producer in the world virtually the entire production is necessary to meet consumption, and only small quantities are exported.

São Paulo accounts for about 20 percent of the total Brazilian production of beans. In 1939, 412 million pounds were produced in this state. Both dwarf and string beans are grown in São Paulo. There are two planting seasons, February for the winter bean and September to November for the rainy-season bean. Harvesting takes place from two to four months after planting. Yields range from one to two thousand pounds per acre, one of the highest yields per unit area in the world.

Prices received by growers have been very favorable in recent months. Current quotations for beans are $3.00 per bag of 60 kilos (132 pounds), or about 2.27 cents per pound.

Mandioca

Mandioca is cultivated both as a food product and for industrial uses. As a food it is cooked, baked, or used in the form of flour to make breads and pastries.

[10] Boxes of 32 kilos (about 70 pounds).

To prepare it for industrial purposes it is peeled and dried, and the starch is then extracted. The greater part of the starch is used in the laundry or bleaching industries. It is also used in the manufacture of dextrine, glucose, ethyl alcohol, and other chemical products.

In São Paulo mandioca is planted during the rainy season from August to December. It is harvested after the eighth month, if grown for food purposes. However, mandioca grown for industrial use is allowed to grow 20 months, because this prolongation doubles the yield of starch. The plant is grown principally on the sandy clay and alluvial soils of the plateau region in central and western São Paulo. Yields range from 45 to 110 tons per acre. In recent years production has averaged about 340,000 tons annually.

The mandioca flour industry is well organized. Production in São Paulo constitutes about 10 percent of the total and amounts to about 85,000 tons annually.[11] The flour is manufactured either in small ovens on the growers' property or in large mills, though the mill flour is much better in quality and is therefore more widely in demand. Although the need for more milling units is evident, lack of capital and the high cost of mechanical equipment have prevented establishment of new mills; however, a plan to form growers' cooperatives in order to purchase milling equipment is now being advanced. The Government has aided the mandioca flour industry by issuing a decree requiring the use of 8 percent mandioca flour in the manufacture of mixed bread and baked goods.

LIVESTOCK

Cattle and hog raising constitute the principal livestock industry in the São Paulo-Northern Paraná region. Cattle are raised for dairy purposes and are also fattened for slaughter. Hogs have been raised principally for lard, but interest in various meat types has been evidenced in recent years.

Cattle

Although some cattle are raised in the Campinas-Santa Barbara area and in Ribeirão Preto, the principal cattle district of São Paulo is found around Barretos,[12] which is the center for the fattening of cattle brought from the states of Minas Geraes, Goyaz, and Matto Grosso. About 500,000 head of cattle are fattened each year on the natural pastures in this area. Of this total, almost half are slaughtered at a large packing plant and at *xarqueadas* (jerked beef plants) in the vicinity of Barretos, and most of the remainder is shipped to packing plants in or near the city of São Paulo.

When brought from the interior to the pasture land about Barretos at approximately 3 to 3½ years, the range cattle are in poor condition, averaging only about 660 pounds. The cattle are kept on the pastures from 8 to 10 months and are then ready for

[11] The flour yield is about 25 percent of the weight of the root.

[12] Barretos had formerly been a great cattle-raising center, but the rise in land prices in this area led to a new trend in the industry. The states to the north and west of São Paulo began raising the cattle, while the Barretos area became engaged principally in the final fattening.

slaughter, at which time they average about 1,000 pounds per head. When sold for slaughter they are paid for on the basis of their dressed weight, which usually averages 55 percent of their live weight.

Thin range steers from Matto Grosso are now quoted at approximately $12.50 per head. After 8 or 10 months on the fattening pastures, the same animal (at current prices of 3.93 cents per pound, dressed weight), will bring about $21.50. It has been stated authoritatively that the price of thin cattle has more than trebled in the last six years - that range steers selling today for $12.50 brought only $3.50 per head in 1935. Fattened steers in 1935 brought $12.00 to $12.50 per head, in contrast to present prices of $21.50 per head at Barretos and of $22.50 at São Paulo.

The cattle-fattening industry in the Barretos district is based entirely on grass. The principal range grasses are jaragua *(Hyarrhenia rufa)* and molasses or "fat grass" *(Melinis minutiflora)*. Although considerable tracts of grazing land have been sold or rented for use in producing cotton and other crops, there is an abundance of unused land available for a great increase in pasture land.

The Zebu (Brahma) breeds and crossbreeds of the Zebu and the native stock have spread rapidly in São Paulo and the states to the north and west. These breeds and crosses have developed a natural resistance to many of the insect pests and diseases common to the area, and are considered to be better adapted to the tropical and subtropical climate than are European breeds.

Meat

The meat industry in São Paulo is centered around the cities of Barretos, the cattle-fattening area, and São Paulo, the principal market for meat products. The principal meat product has always been jerked beef, though in recent years its production has been replaced to some extent by refrigerated meat products, such as frozen and chilled beef, and by canned meats. In the past decade the production of meat in São Paulo has increased considerably, both in volume and in percentage of total Brazilian production. In 1930 São Paulo produced only 86,600 tons of meat, about 10 percent of Brazilian production. By 1937 this state had increased its production to 393,000 tons, more than 30 percent of Brazil's total meat production in that year.

Dairy Products

The dairy farms in São Paulo are located on the lowlands along the rivers, because of the rapidity with which forage grows on these lands and the greater safety they offer against the occasional droughts which strike this area. The raising of milk cows has progressed steadily, especially in the Campinas-Santa Barbara and Ribeirão Preto sections, but it is still carried out on a small scale.

The Holstein constitutes the chief breed of milk cow in São Paulo, with an average daily production of about 15 quarts for two milkings. Crossing of the Holstein with native cattle, especially the Caracú, has produced good results, all the better qualities of the Holstein being retained. Other breeds of milk cows in São Paulo are the Schwitz, Simenthal, Jersey, and Normandy.

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Production of fresh milk in São Paulo has been estimated roughly at about 2.5 million quarts daily, representing about 25 percent of the total production of cow's milk in Brazil.

Condensed and powdered milk are manufactured for shipment to areas where fresh milk is unavailable, though still on only a small scale.

The manufacture of butter and cheese has progressed steadily in recent years. Within the city of São Paulo there are 10 factories manufacturing butter from cream received from the many dairy farms in the nearby areas. It is interesting to note that the consumption of sweet butter in this area constitutes 95 percent of total Brazilian consumption, which is estimated at 53 million pounds annually.[13] Consumption in São Paulo is therefore about 50 million pounds annually, or about 7 pounds per capita. This is about half the per capita consumption of the United States, which in 1939 was 17.6 pounds. The per capita consumption of Brazil as a whole, however, is only about 1 pound per year.

São Paulo also manufactures cheese in considerable quantities. The production of the finer cheeses is concentrated in this area. The manufacture and sale of cheese have been especially successful in São Paulo and in Brazil as a whole, since this product is considerably less perishable than other dairy products and may thus be shipped to many areas too far from the source of supply to receive fresh milk or butter.

Hogs

Hog raising, though not a major farm occupation, is of considerable importance as a supplementary source of income to many farmers in the Campinas-Santa Barbara and Northern Paraná districts. São Paulo contains about 2.5 million hogs, or about 10 percent of the total number in Brazil. Lard-type hogs are most commonly raised. Several national breeds have developed through natural selection, some of the original stock having come from China via Macao and Portugal. Many of the hogs are almost hairless, and are less subject to lice and other external parasites than heavily coated breeds.

Current prices for well-finished hogs of about 3.18 cents per pound, dressed weight, at slaughter or shipping points, are considered good by farmers in this region. In calculating dressed weight of hogs, a uniform practice is followed of discounting 20 percent from live weight. Thus a hog weighing 90 kilos (198 pounds) would bring $8.40. The rather low percentage of discount results from the fact that hogs were originally produced and sold for lard only, and that interest in meat types is of recent development.

The increased use of various vegetable oils as substitutes for lard has been an important factor in the recent trend toward the production of meat-type hogs. As a result of this trend, the output of products such as fresh and salt pork, ham, bacon, and sausages has more than doubled in the past five years.

Hides and Skins

The production of hides and skins has long been an industry of importance in São Paulo, which in 1937 produced 19,363 short tons, or about 30 percent of the total

[13] *Brazil, 1939-40*, Ministry of Foreign Affairs, Rio de Janeiro.

production in Brazil. Virtually all of the production is exported. The chief market in the past decade was Germany, but with the advent of war the United States has become the leading market. Prices received for Brazilian raw hides in foreign markets have been relatively low, due to a number of defects in the hides caused by ticks and other pests as well as by careless methods in branding. With the war, prices increased, however, reaching $110 per short ton in 1940, an increase of $39 per ton over the 1938 price.

The following tabulation shows the production of livestock products in São Paulo in 1937:

	Quantity	Value
	1,000 pounds	*1,000 dollars*
Meat	785,313	37,790
Hides and skins	38,726	4,260
Dairy products[1]	16,440	3,154
Lard	70,547	4,320
Other products	37,101	2,069
Total	948,126	51,603

[1] Excluding milk.

CONCLUSIONS

Agriculture in the São Paulo-Northern Paraná region has passed through many changes in the past decade. Its progress has been marked by improvement in not only the quantities produced, but also in the quality of the products. In the principal production centers a definite increase in diversification has been evidenced. In addition there has been achieved a far better distribution of cultivation, with a view to raising each crop on the land best suited to it. This has had the effect of considerably reducing costs of production. The Federal Government has aided growers directly through distribution of seeds and protection against pests and plant diseases and indirectly by providing improved transportation facilities and improved marketing conditions through commercial agreements with other countries and through stimulation of domestic consumption.

Old coffee plantations are being replaced by cotton plantations, by citrus orchards, or by pasture lands with the finest grasses, thus establishing prospering new industries. In the newly settled zones in western São Paulo and Northern Paraná, coffee cultivation is being greatly improved, and increased yields permitting greater profits to growers have been realized. In cotton cultivation the progress has been rapid and is continuing, as a result of continued improvement in the fiber, increased yields, and lower production costs. Citrus fruits are also being cultivated under more modern methods at lower cost, and the improved fruit finds a ready market. Other crops such as rice, mandioca, beans, and corn also show increased production and improvement in cultivation methods.

The cattle-fattening industry in western São Paulo has also experienced considerable growth in recent years, necessitating an expansion of lands devoted to pasture and an intensification of the culture of forage. The meat-packing industry has expanded accordingly, and many new slaughter houses and packing houses have been established.

The São Paulo-Northern Paraná region has thus increased its importance to Brazilian agriculture through a progressive program of increased production. The factors influencing this increased production include the opening of new lands to cultivation, improvement in methods of cultivation, diversification of crops, improvement in transportation facilities, and government aid in both cultivation and marketing.

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SOME OBJECTIVES AND PROBLEMS OF PRICE CONTROL . . . . .

By Montell Ogdon*

The interference of certain forces of modern warfare with the processes of production and distribution of goods causes governments to resort to price fixing as one of the instruments for controlling production and facilitating distribution. Since the prevention of inflation necessitates that prices be kept in line at all stages from production to consumption, governments are finding it necessary to go back of retail prices to counteract the rise of basic costs which contribute to the determination of price. In even the most highly developed price control systems there are difficulties in the maintenance of production prices that will obtain the quantity and type of supplies to satisfy wartime needs, that will be remunerative to producers, and that will be within the buying power of consumers. In the correlation of producer and consumer prices an important role is being played by wartime international purchase agreements, which tend to increase the assurance of a supply at reasonable prices for consumers and a market with remunerative prices for producers.

WARTIME PROBLEM OF PRICES

Conditions Evoking Price Control

In the present war all belligerent countries are endeavoring to exercise control over prices of essential agricultural products. A person need only remind himself of the trade conditions in the World War to understand why governments have deemed price control an urgent matter at present. During 1914-1918 the interference with production and distribution of agricultural products, together with the radical change in the nature of the demand for goods, created domestic price conditions within the belligerent countries that disorganized the domestic economy and obstructed military preparations.

It is the presence of the forces interfering with normal supply and demand that evoke price controls. In countries that are dependent upon imports to supply domestic demand, the natural effect of military or naval interference with those imports is to cause abnormal price rises. The sudden shortage of food supplies that has developed in some countries or the danger of a shortage that has developed in others would tend to send domestic food prices soaring if they were uncontrolled.

A disturbance of a different nature arises in surplus-producing countries because of wartime trade obstacles. Exportable surpluses of bulky commodities such as cotton, meat, grain, rubber, and jute, stacked in warehouses or piled on the wharves when ocean transportation is not available, have tended to have a depressing effect on prices received by domestic producers. Measures to relieve producers and to stimulate production of those commodities most essential to the population and the prosecution of the war may therefore be expected.

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Increased demand for commodities to be used in the manufacture of implements of war creates scarcity and tends to cause prices to rise as soon as the demand begins to deplete the available supply. The need of hides, oils, and foodstuffs for military purposes would tend to create domestic shortages that might make consumer prices prohibitive if government regulation of prices were not invoked.

Wartime psychology has in the past created consumer buying panics that caused prices to skyrocket, thus requiring drastic government action. Even before the beginning of the present war, though supplies of sugar were ample, a run on retail and wholesale sugar stocks was in evidence. This caused an unjustified rise in the price of sugar in the United States and Canada that required government action for correction of the situation and protection of consumers.

Speculators and profiteers, and dealers who would merely like to make a profit whenever possible, may take for themselves profits that added together would be costly to the consumer if governments were not able to control or restrict those profits. In all countries there are instances of dealers who mark their goods above the figure necessitated by increased costs. If margins of profits are not controlled, it is easy for unscrupulous dealers to change the price or substitute another grade of goods.

Increased production costs may result in the rise of commodity prices beyond the reach of the wage earner. Consumers in most industrially advanced countries now look to their governments to protect them under such conditions, either by making incomes larger or by holding down the prices of prime necessities. Producers may at the same time require consideration in the face of increased costs of production, especially if maximum prices are fixed for commodities.

Since governments cannot finance wars without revenue, increased taxes are usually resorted to. The additional wartime taxes on commodities at various stages from production to consumption may considerably increase the cost of articles. The increases resulting from such taxes and the mark-up above that justified may require governmental tax policies and police administration that will safeguard the consumers.

The large wartime expenditures in the form of purchases of raw materials and foodstuffs, and in increased payrolls, place large volumes of money in circulation. This increased purchasing power produces an inflationary movement that requires the most strenuous efforts if it is to be kept under control. The ill effects on consumers during the inflationary period and on producers in the deflationary period are demonstrated by our own experience during and after the World War.

The problem of government financing is also one of great importance in each belligerent country. Besides the necessary war expenditure a government incurs added debt burdens which the people must bear if inflated prices are paid for the war materials purchased. The cost of arming the United States in the World War is estimated to have been at least 15 billion dollars higher than was necessary.[1]

The Purpose of Wartime Price Control

In one respect at least it may be said that the governments of Europe have profited from the economic experiences of the World War. Each government is trying to

[1] Statement by the Office of Price Administration and Civilian Supply before the House Ways and Means Committee, May 7, 1941.

prevent a general price inflation such as that which took place during and following the war. Price control policies vary somewhat, since some nations may have deficits in certain essential commodities whereas others may have surpluses of those same commodities. Thus, the deficits of certain foodstuffs - particularly fats and oils - of continental European countries cause those countries to maintain a policy that will stimulate domestic production and at the same time hold down the price to consumers. Surpluses of wheat or apples in other countries, on the other hand, may warrant a policy that will protect producers from unmarketable surpluses and discourage production that is unsound economically.

It may be stated that the general objectives of price control in the present war are as follows: (1) to encourage the production of those materials essential to the nation for feeding and clothing the population, for the conduct of the war, or that can be exchanged for necessities; (2) to keep the prices of civilian necessities within the reach of all classes; (3) to keep down the cost of financing the war; (4) to discourage the production of unmarketable surpluses; and (5) to safeguard the monetary and economic system of the nation during and after the war.

Transition from Peacetime to Wartime Price Control

Government control of agricultural prices was widely employed when the present war began, varying from subsidies or price guarantees for individual commodities to comprehensive control over the whole national economy in Germany.[2] The price control measures enacted in peacetime are now being used as far as possible in the effort to attain the wartime objectives. This use, however, is of a limited nature and varies with the type of pre-war control measures operative in each country. The belligerent countries have enacted additional legislation to effect the adjustment deemed necessary to produce the types and quantities of commodities needed in the war and to regulate consumer prices in accordance with changing costs of living.

Many countries, neutrals as well as belligerents, deemed it necessary at the beginning of the war or soon thereafter to provide the necessary authority for the control of retail prices and to take steps with a view to the general freezing of prices. Since the National Socialist Government had worked out a system of fixed prices on sales of domestically produced and imported commodities, together with strict control over trade and processors' margins, no general price control legislation was necessary in Germany.

In the United Kingdom the necessary authority for the full control of prices was given to the appropriate minister or authority (including the Board of Trade, the Minister of Agriculture and Fisheries, and the Minister of Supply) by the Emergency Defence Regulations of August 25, 1939. The competent authority is given power to regulate the production, distribution, disposal, and use of articles of any description, and to control "the prices at which such articles may be sold," so far as it appears to that authority "to be necessary in the interests of the defense of the realm or the efficient prosecution of the war, or for maintaining supplies and services essential to the life of the community."[3]

[2] "Agricultural Price Control in Foreign Countries," *Foreign Agriculture*, Feb. 1939, pp. 45-83.

[3] *Emergency Powers, Defence Regulations, 1939*, Statutory Rules and Orders, 1939 No. 927, Regulation No. 55, p. 41.

On September 1, 1939, the French Government decreed that wholesale prices of all agricultural products except those already fixed by existing legislation would be fixed by the Council of Ministers, on the suggestion of the Minister of Agriculture.[4] On September 7, 1939, Australia inaugurated a price-control plan fixing prices on food and other goods at the levels of August 31. It was announced that the step was taken to prevent profiteering.[5] After a number of different efforts to prevent rises during 1936-1939, the Japanese Government on September 19, 1939, prohibited any advance in prices, rents, wages, salaries, fees, freight, and insurance premiums.[6]

The Turkish Ministry of Commerce is authorized by decree of the Council of Ministers issued on May 31, 1940, to fix and control maximum prices of such articles and goods on the domestic market as it may deem necessary. In Finland the Minister of Public Welfare and Supply was empowered on October 23, 1940, to fix the maximum prices of all general commodities for the entire country or for certain areas thereof. On May 6, 1941, it was reported that Brazil had acted to halt price rises by setting prices at which products would be sold and by prohibiting price increases.[7]

CONTROL OF CONSUMER PRICES

The effectiveness of control of consumer prices is the ultimate test of whether or not a price-control system is successful. If consumer prices are allowed to rise, they first force up the cost of living and then wages and other production costs, which produces the much-feared spiral of inflation. Whether the inflationary forces are due to the fiscal and monetary problems of the government, to disruption of international trade, or to insufficient domestic production capacity, governmental price control erected in an inflationary period is subjected to enormous strain.

Retail price control cannot, of course, place food in the hands of consumers. Since any inequity in price levels is attributable not to the prices themselves but to the difficulties inherent in the production and distribution processes, it may be wishful thinking to expect a price control system to work unless it extends to the costs that are causing the price rises. Those costs, nevertheless, must be controlled if the cost of living is to be stabilized. In times of emergency food shortages, therefore, governments resort to drastic measures, such as confiscation of commodities at prices arbitrarily fixed by the government, compulsory delivery of commodities to former consumers at fixed prices, or government fixing of prices at which goods may be sold at retail. The fixing of consumer prices usually goes through several trial and error stages, beginning with the freezing of retail prices and ending with an effort to control the basic factors that cause the prices to rise.

Retail Price-Freezing Measures

The fixing of specific or maximum prices at which goods may be sold at retail is one of the oldest known forms of consumer price control. This type of control has

[4] Hazen, N. W., "French Wartime Control of Agriculture," *Foreign Agriculture*, Jan. 1940, p. 49.

[5] *New York Journal of Commerce*, Sept. 8, 1939.

[6] Croft, C. M., "Economic Conditions in Japan in 1939," *Commercial Intelligence Journal*, Sept. 14, 1940, pp. 385-386.

[7] *New York Times*, May 6, 1941.

often been enacted in times of greatly disturbed conditions, as was the case in Paris during the French Revolution, in the Southern States during the last years of the American Civil War, and in many countries during 1917-1919. Although it has also been tried in many countries since the World War, it has not been widely successful. Discrepancies have developed in nearly every instance between the costs of production and the fixed retail prices. There have therefore been constant changes in the price-fixing programs, with a tendency toward the expansion of both retail price control policies and production aid programs.

In Italy regulation of retail prices has been tried by several state agencies since the Fascists seized control in 1922. It was tried by various local commissions, committees, and syndical organizations during 1924-1930; by propaganda and retail associations during the period of rising prices in 1934; by local Fascist Intersyndical Committees from June 16, 1934, to October 16, 1935; by a Permanent Committee for Control of Prices of the Fascist Party from October 16, 1935, to April 28, 1937; and by a Central Corporate Committee since April 28, 1937. The chief difficulty seems to have been in the government's failure to correlate its producer and consumer price policies. The Central Corporate Committee was therefore directed in 1937 to fix "just corporative prices" taking into consideration the interests of the population as a whole. The general pre-war organization has been retained in Italy during the war, but action to strengthen government control has been extensive.

In Germany the law of October 29, 1936, for carrying out the Four-Year Plan provided for the appointment of a Reich Commissioner for price formation with authority to adopt the necessary measures to assure economically justifiable prices. The ordinance of November 26, 1936, prohibited increases in prices or charges of all kinds without special permission of the Price Commissioner. For the most part the present wartime controls had already been in operation for several years before the beginning of the war, and the National Socialist Government was not unprepared with price control machinery for the direction of production and distribution of supplies to obtain their most effective wartime utilization. Controls were being exercised over not only prices but also over the processes that determine prices. Though the price stop decree *(Preisstopverordnung)* of November 26, 1936, was legally still in force when hostilities began in August 1939, a War Economy Decree was issued September 4, 1939, containing provisions for the freezing of wages, salaries, and certain other costs, and providing that if any gains should result from this or other causes sellers would be responsible for reducing their prices accordingly.[8]

In the other belligerent countries, orders freezing wholesale and retain prices of agricultural products were generally promulgated after September 1, 1939, except in some of the British Dominions where there were adequate supplies or even surpluses of a number of the essential commodities. A series of provisional price decree orders was thus issued in the United Kingdom soon after the outbreak of war, providing that no sales should be made at prices higher than those prevailing in the week preceding the order. A few days afterward, provisional maximum wholesale prices were fixed. On September 9, 1939, a French decree prohibited any increase in the wholesale or retail prices of agricultural products, other than those regulated by existing legislation. After German occupation increases were again forbidden in Paris by decree of July 1940.

[8] Domeratzky, Louis, "Price Control in Germany - Policy and Technique," *International Reference Service*, U. S. Department of Commerce, p. 10, April 1941.

Control of Margins of Profit

Since allowances must be made for the increase in costs, the next step after price freezing is to make regulations that will permit sellers to take into consideration such factors as increased freight rates, insurance rates, and labor costs. This requires strict control over margins of profit and the fixing of the price of commodities at each successive stage of sale. The National Socialist Government in Germany had gone through this experience before hostilities started, having brought trade and processor margins under control for most staple foodstuffs, including "grain and grain products, potatoes, milk and dairy products, fats, and most types of meat and meat products."[9]

In the United Kingdom the Price of Goods Act, November 16, 1939, made it unlawful to sell goods at a price exceeding a permitted maximum; that is, the price at which the goods were sold or offered for sale on August 21, 1939, plus such permitted increases as could be reasonably justified in view of the changes in the business. Under the provisions permitting increases because of changed conditions, prices continued to rise as a result of the devaluation of the pound, higher freight rates, and war risk insurance. The Government decided that the Treasury should bear, for a time at least, the loss involved in the effort to avoid further increases or to check the abruptness of any rise. On February 1, 1940, it was disclosed by the Chancellor of the Exchequer that a sum of 1 million pounds weekly was being provided by the Treasury in an effort to control retail food prices. This was effective but costly, and later price increases were again deemed necessary.

Some fifty food commodities in the United Kingdom were listed on February 7, 1941, as subject to maximum price control orders at one or more stages. The stages at which the maximum sales price is fixed include the respective sales by growers, importers, wholesalers, retailers, and government agencies. There is a tendency toward the institution of control of sales at the earliest possible stages - that is, by growers or first-hand sale by importers. In the United Kingdom, Germany, and Italy this is followed by strict control over margins of profit all the way to and including the final sale to the consumer.

The prevention of inflation is dependent on the effective control of prices at each stage at which a sale may be made. If the price paid to producer, processor, middleman, wholesaler, or retailer is allowed to rise, the increase may be passed on to the consumer. The effective control of consumer or retail prices in reality means the control of prices at all stages. This in turn means control over all the factors that would contribute to a price rise if the natural price forces were allowed to function in time of war. The costs that cannot be allowed to rise sharply if inflation is to be avoided are the production costs, including prices paid for raw materials and labor.

Control over Costs of Raw Materials

In order to hold down consumer prices it is necessary to obtain raw materials such as wool, cotton, hides, and foodstuffs at reasonable costs. When a government

[9] Franklin, Harry L., "Wartime Agricultural and Food Control in Germany," *Foreign Agriculture*, April 1940, p. 186.

extends its price control measures to the restriction of raw material costs its action has a direct bearing on the prices to be paid for imported farm products. The larger importing belligerent nations, under their policy of stabilizing domestic prices at approximately the pre-war level, extended their price controls to their imports of essential agricultural commodities. Germany continued her pre-war policy of making imports through government-controlled channels and acquiring raw materials through barter agreements in which the prices of the commodities purchased were specified.

At the beginning of the war arrangements were made between the United Kingdom and France for French purchases in the British Empire and for British purchases in the French Empire "of needed raw materials at favorable prices."[10] To avoid price rises due to competition from purchases in the countries outside the French and British Empires an Anglo-French Coordinating Committee was established with headquarters in England.[11] By placing itself in the position of sole importer into the United Kingdom of all essential foodstuffs and certain other raw materials the British Government was able to exercise an important effect upon the level of world prices, especially by negotiation of purchasing agreements with the Dominions and other countries that had surplus commodities.

The purchase agreements concluded by Germany since the beginning of the war have been for the most part with countries on the continent of Europe. For this reason, and because important military and political considerations entered into the agreements, German purchases have not had so important an effect upon world market prices of raw materials as have those made by the United Kingdom. The British purchase agreements have been made principally with South American countries, the United States, and the British Dominions. The purchase of beef from the Argentine has continued since the beginning of war under the same type of arrangement that was being followed before the war. Important purchases of cotton and corn have been made by the British Government from the United States. Among the purchase agreements that have had an important bearing on prices are those by the United Kingdom with the British Dominions for wool, wheat, bacon, and dairy products.

The British Government in 1939 agreed to purchase the New Zealand and Australian wool clips for the duration of the war and one year thereafter at fixed prices averaging about 30 percent above the previous year's price. Since the United Kingdom did not need all the wool for its own use, it became possible for the British Government to sell this surplus wool to other countries; the profits accruing were divided equally between the United Kingdom and the Dominions from which the purchase was made. An agreement was also reached between the United Kingdom and the Union of South Africa whereby the British Government agreed to make purchases of wool for the 1940 season that would support prices in the Union of South Africa. The plan provided that the British Government would make purchases that would maintain prices at the Australian level, a flat rate of 10¾d. sterling per pound for wool in the grease. This action had the desired effect of bolstering the price of wool in the Union of South Africa.

A number of Anglo-Canadian commodity marketing agreements have been signed since November 1939. The bacon and cheese agreements specify the prices which the United Kingdom shall pay for the respective grades and the quantities of each grade

[10] *Foreign Agriculture*, January 1940, p. 44.
[11] *Ibid.*

which shall be delivered. The prices provided for in the agreements have been relatively low in relation to other prices in Canada. The Canadian Government has deemed it necessary, therefore, to aid the producers in order to encourage production of the quantities required to fill the quotas specified in the agreements.

Difficulties of Enforcement

In most countries difficulties are encountered in the effort to hold down consumer prices. Reasons for the difficulties are advanced by the government in each country; and these reasons vary, of course, with the particular economic and political conditions prevailing in the respective countries. Some of the reasons given are obviously superficial. Thus it is said that the rising prices are due to hoarding, speculation, or fear. Sometimes specific persons or groups of persons are accused of causing the price rises; other times the rise to which the government gives its official approval is explained as being due to the increased cost of imports, to factors beyond the control of the government, to increased costs of production, to adverse crop conditions, transportation difficulties, or even to temporary shortages. Both the administrative and the economic problems of price control are difficult.

With respect to the organization and administration of price control, it may be noted that the systems are often initiated hurriedly and under difficult conditions. The delegation of the necessary authority, creation of the necessary machinery, and arbitrary fixing of prices in the excitement and turmoil accompanying the beginning of hostilities should not be expected to produce a governmental mechanism which will operate with the smoothness of an agency that has withstood various crises and has developed over a period of years. The first price control decrees should be considered as provisional measures and subject to change if costs of production or cost of living should necessitate adjustments. In both Germany and the United Kingdom it has been officially announced that later price changes, even rises, may be necessary.

The costs of production, and hence consumer prices, cannot be expected to stand still in time of war. The changing nature of the foreign raw material supply and of wartime demands, transportation, and labor conditions has been such as to necessitate official changes in the price level in all the belligerent countries. The increased costs of transportation and insurance and the rising prices of raw materials abroad have greatly increased the costs of materials imported from overseas into England, India, the British Dominions, and British possessions. This problem has perhaps been greater in the United Kingdom than in any other belligerent country because of the degree of dependence on overseas supplies. The effectiveness of British price control is dependent on the government's ability to keep down the costs of imported commodities. Domestic production can be taken care of by subsidies and by the government policy of making up the difference between the minimum producer price necessary to obtain a maximum of production and the maximum consumer price necessary to keep essential products within reach of the population.

Price control has not achieved the ends desired in some countries because of the inept administration of the control and, at the same time, because of economic conditions which were in a real sense beyond the power of the government to control. Thus the failure of the system in Germany to hold down prices during the World War has been attributed in part to the fact that the initial measures did not contain the detailed

provisions for establishment of necessary administrative organization and procedure. Neither did it specify the basis for the fixation of prices.[12]

On the other hand, economic factors had much to do with the virtual breakdown of the German system toward the end of the World War. Domestic production of essential agricultural products had declined to a third or even half of pre-war production; the domestic transportation system was rapidly breaking down from effects of the war; and the Allied blockade prevented the importation of supplies from overseas. Similarly, at present the Italian Government encounters difficulty in holding down consumer prices because of the inadequacy of the domestic supply and because of the impossibility of obtaining needed supplies from overseas.

For a time at least it is possible for a government to hold down prices in the face of shortages, on the basis of patriotic cooperation and through government control over imports, exports, production, and distribution. If the government seizes the entire national supply of a commodity, makes its selling price the base price, and strictly enforces margins of profit, the price may be kept within reasonable control. This, however, may necessitate the plentiful use of government funds to make up the difference between the cost of commodities to the government and the price at which they are sold. It may also necessitate the free use of the power of requisitioning or fixing of priorities in order that the government may stop inflationary forces and fix the base selling price, to which other costs are added.

If speculation or fear of a shortage is sending the price up, government requisitioning of the supply effectively stops the unjustified rise. The government may then keep the base price under control by fixing the selling price at which the supply is released. In order to prevent speculation or fluctuations of prices resulting from trading in futures, governments have also closed the commodity exchanges or prohibited sales in futures. The surrender of commodities held for future delivery then takes place at a price specified by the government.

When the government controls the entire supply of a commodity, it may use its position for social as well as for military purposes. Thus in the United Kingdom the Government exercised the priority principle in requiring the delivery of specific quantities of milk to certain persons at the price prevailing at an earlier date.

PRICE FIXING AS A CONTROL OF PRODUCTION

Price fixing at levels remunerative to producers has been widely utilized in belligerent countries that need to increase the domestic production of particular commodities and at the same time want to control price advances. Guaranteed prices or specific subsidies having the effect of price fixing are operative in Germany, Italy, and the United Kingdom for nearly all principal agricultural products. Price-supporting measures are operative also in other European countries and the British Dominions with respect to those commodities for which there is a surplus problem or insufficient domestic production to meet the wartime need.

The agricultural commodity price-control system as developed in Germany since the establishment of the Reich Food Estate *(Reichsnährstand)* in 1933 might have been

[12] Domeratzky, *op. cit.*, p. 2.

designed to funccion under wartime conditions. It is an integral part of the over-all program of self-sufficiency. In order to increase the output of desired products the Government has consistently given special attention to the interests of agricultural producers. Base producer prices are established to encourage production of essential commodities. Production, processing, and distribution are directed by associations which function as units of the Food Estate. Prices are regulated at all stages; speculation is prohibited; middleman and distributor profits are reduced to a minimum; and violations of the price regulations carry severe penalties.

The present Italian price control by a Central Corporate Committee and compulsory commodity pools seems to be more nearly adequate to meet the needs of the subsistence type of agricultural country than were earlier Italian attempts to control consumer prices. Since the fixing of maximum prices by corporative agencies in Italy did not result in the desired increase in production, subsidies and guaranteed prices were also employed. The price of wheat was supported during the operation of the other control schemes by granting anticipatory loans through the wheat pools *(Ammassi granari)*. The price guarantee of wheat became generally more effective under the Act of June 16, 1936, which made these pools compulsory and provided that farmers should be paid the guaranteed price for delivery of their wheat to the pools. In 1938 the control was extended to the regulation of acreage in accordance with the requirements of the Ministry of Agriculture.[13]

Since August 26, 1939, compulsory pools have been established in Italy for important additional commodities, such as corn, rice, olive oil, wheat and corn by-products, and seeds of fiber-producing plants. At present in the fixing of dealer prices on domestically produced commodities the price-control committee is also required to investigate the costs of production. Theoretically at least the Italian system should satisfy the requirements for obtaining the objectives of wartime price control - it has the machinery and authority with which to fix prices, taking into consideration the welfare of both producers and consumers; to control speculation and regulate profits; to control the type of commodities produced; and to control their disposal or use.[14]

Inadequacy of Subsidization Measures

Protective tariff duties on imports, production or export bounties, loans, and other price-supporting measures were helpful in many countries during periods of low commodity prices inbringing relief to producers whose incomes were inadequate to meet their costs of production and costs of living, as well as certain fixed obligations remaining from periods of higher prices. The urgency of this type of relief is lessened whenever prices of commodities tend to rise sufficiently to approximate what is termed in the United States "parity prices." There were also a number of instances before the war in which government guarantees of minimum prices to producers became inoperative when the domestic prices rose as the result of increased demand or decreased domestic production.

[13] Miller, H. S., *Price Control in Fascist Italy*, New York, 1938; Hazen, N. W., "Italian Agriculture under Fascism and War," *Foreign Agriculture*, Nov. 1940, p. 686.

[14] Hazen, *op. cit.*, pp. 686-687.

In the Netherlands, before the beginning of the war, the minimum guaranteed prices fixed for eggs ceased to be effective when the foreign demand for eggs increased and the price rose naturally above the guaranteed minimum. The same principles have operated in belligerent countries whenever an increased wartime demand or obstruction of supply has caused a deficiency in any commodity. The problem thus ceases to be one of merely supporting agricultural prices and becomes one involving the restriction of rises in retail prices above the wage level and the purchasing power of consumers. Governments have therefore modified many peacetime price-supporting measures, such as protective tariffs or bounties, which tended to aggravate the problem of high prices. Though the high cost of living and the problem of financing the war may cause increased emphasis to be placed on the control of consumer prices, the problems of production to meet wartime needs require no less attention.

Adjustment of Agricultural Programs

Agricultural programs established in democratic governments during 1919-1939, whether designed for the purpose of national self-sufficiency or chiefly for protection of domestic producers against world agricultural surpluses and the fall of farm prices, have been subjected since July 1939 to changes deemed necessary to obtain the new national objectives envisaged in the program of economic warfare.

The hog and bacon scheme in effect in the United Kingdom was suspended soon after the beginning of the war. The pre-war program was essentially a subsidy arrangement with a guaranteed price for hogs. The wartime need called for not uneconomical price-supporting measures but for actual fixed prices which would produce the largest quantity of meat and fat for the smallest amount of feed, and which would protect consumers from exorbitant prices in possible periods of meat or fat shortages. Although the pre-war British wheat scheme was in general more suitable for war purposes than was the bacon scheme, the Wheat Act of 1932 had fixed a "standard price" that was not adjustable to war conditions. An amendment adopted in July 1939 established machinery for altering, if necessary, the minimum price of United-Kingdom-grown millable wheat. The Act as modified was better fitted to serve the war purpose of increasing production and to permit the necessary control over milling quotas.

On March 12, 1941, the Canadian Government, confronted with increasing surpluses of wheat and a possible shortage of dairy products, proposed in Parliament a reduction of wheat acreage and increased sowing of coarse grains, grass, or clover. Payments to wheat producers were not enough in time of war. In addition it was necessary to adjust production to conform to international trade and the needs of the nation. In the Prairie Farm Assistance Act of 1939 the Canadian Government also made provision for increasing the security of farmers by payments, in years of low yields or of emergency conditions, which would assist them until the next crop was harvested. In order to protect the interests of dairy farmers the Canadian Dairy Products Board in January 1941 was given authority, upon the recommendation of the Minister of Agriculture and with the approval of the Governor in Council, to establish minimum market prices for butter. On May 10, 1941, an Order-in-Council was issued establishing the minimum prices at which different grades of butter could be sold in Canada.

[15] *The Canada Gazette*, vol. 74, p. 4070, May 17, 1941.

In the Commonwealth of Australia, where the Government wished to increase the production of cotton, a price guarantee over a period of years was adopted.[16] A statute providing for a cotton bounty that varies inversely with the Liverpool spot price of American middling raw cotton - or, if the Liverpool cotton exchange is closed, with the New York spot price, together with freight cuts and certain other factors - assures Australian cotton producers of a guaranteed price for the next four seasons. The long-term guarantee was adopted after the cotton acreage decreased durin the 1940 season.

Monopolies, which before the war controlled the imports in many countries, domestic production, and the price paid to producers continue to perform their functions under wartime conditions. The monopoly control systems in various countries have been called upon to use their machinery to facilitate the filling of wartime needs, principally by the removal or increase of domestic production quotas and by increase in the price to producers.

The Norwegian Government in the fall of 1939 authorized the State Grain Monopoly to purchase domestic wheat at a guaranteed price, regardless of the selling price of grain products. The Government undertook to reimburse the monopoly for all payments made to farmers to bring the price up to the guaranteed minimum.[17] The Moroccan Tobacco Monopoly removed all restrictions on the limitation of area to be planted to smoking types of tobacco and increased the announced average purchasing price for the 1940 crop of such types from 2.72 francs to 3.29 francs per pound.[18] The New Zealand Tobacco Board, a semiofficial organization operating under the supervision of the Ministry of Industries and representing growers of tobacco in New Zealand, sought 3-year purchase contracts with manufacturers at prices assured by the Government instead of the 1-year private agreements made formerly.[19]

Assurance of Market and Remunerative Price

In countries producing commodities for export a number of schemes have been developed for the purpose of protecting producers from the uncertainties of foreign markets. The most comprehensive of these schemes provides for the government fixing of guaranteed prices, government purchase of the entire crop, and government disposal of the crop at home and abroad. Commodity export schemes were developed in the British Dominions out of erratic market conditions during the World War and were stimulated in their growth during the periods of agricultural depression from 1920 to 1939. Existing schemes have been found useful in the present war; some have been expanded, and a number of new schemes have been created.

Besides the Inter-American Coffee Marketing Agreement signed by 15 American Republics in November 1940, a number of national coffee marketing schemes have been adopted during the war. With the object of supporting internal prices of coffee the Government of India adopted a coffee control scheme for the season 1940-41. Registered

[16] "Raw Cotton Bounty Act," August 22, 1940.

[17] Monty, T. J., "Wheat and Flour Trade Regulation in Norway," *Commercial Intelligence Journal*, November 11, 1939, p. 856.

[18] See *Foreign Crops and Markets*, April 27, 1940, p. 487, for other forms of encouragement to tobacco producers in Morocco.

[19] *Foreign Crops and Markets*, June 22, 1940, p. 822.

growers are given a domestic allotment which they are free to sell under certain conditions in a domestic market. The remainder of their output will be delivered to a surplus pool, controlled by a coffee board which will handle all exports. The board may also release coffee from the surplus pool in order to control domestic prices. "In order to aid the coffee growers, the government of the Netherlands East Indies in the early part of August, 1940, instructed the previously established 'Coffee Fund' to act as single buyer and seller for all the coffee produced" in that country.[20]

In November 1940 the Australian Government expanded its wheat stabilization scheme guaranteeing producers a fixed price on an annual crop not exceeding 140 million bushels. Growers are licensed and sow only the acreage authorized by the Government. The wheat is marketed by the Australian Wheat Board.

Fears as to the marketing of Australian fresh fruit were aroused because of the loss of the European and especially the English market. Plans were therefore proposed which provide for a complete scheme of marketing, with fixed prices and a pool to control all phases of buying and distribution. The Canadian apple surplus that could not be marketed because of the war resulted in the Government purchase, up to certain amounts, of the Nova Scotian and British Columbian apple crops at specified prices. The Canadian Government by agreements with provincial fruit boards undertook to purchase up to 1,147,000 barrels of Nova Scotian apples and up to 1,750,000 boxes of British Columbian apples during 1940-1941. Prices for respective varieties and grades were specified in the agreements, and the boards agreed to certain conditions governing the marketing of all apples under their control.

In the Union of South Africa the Dried Fruit Board, established in 1938, has been given the exclusive power to purchase dried fruit from producers, to dispose of it for domestic use, or, with the consent of the Minister, to make exports at such prices and under such conditions as it may determine. The proceeds derived by the Board from the sale or export of dried fruit must be distributed among producers according to the respective amounts paid for the fruit purchased from them. The Board may also process or cause to be processed any fruit it purchases under the dried fruit scheme. The Dried Fruit Board, under this wartime regulation, acquires a monopoly over the purchase, processing, and distribution of dried fruit. It may fix the price it pays and determine the domestic price to consumers, as well as whether or not it will sell at a particular price in foreign countries. The Board may thus determine the amount for domestic distribution and set the price to effect the best possible satisfaction of consumer needs. The Board disposes of the export surpluses largely through quantity sales in pursuance of purchase arrangements made with the United Kingdom and other members of the sterling area.

The control boards created in the Union of South Africa before the war and the new boards established during the first year of war have endeavored to obtain markets and better prices for primary agricultural products. The boards have been able to retain control over the fixing of prices for their respective commodities - virtually all agricultural products controlled by the boards are exempt from the price fixation measures of the National Supplies Board acting under the provisions of the National Emergency Regulations. These control boards, which functioned during normal times,

[20] Paddock, Paul, American Vice Consul, Batavia, Java, *Quarterly Trade Report for Second Quarter 1940 - Netherland Indies*, Sept. 9, 1940.

now determine prices in a period of disturbance. They have followed a progressive price policy which has "not only made for greater stability in the prices of agriculture products but also contributed largely to the improvement of the price level itself." In setting a price the boards make due allowance for (1) the increased costs of production; (2) the enhanced economic value acquired by certain products in consequence of the war; and (3) the intensity of demand and the purchasing power of consumers. The Department of Agriculture and Forestry in South Africa is of the opinion that the control boards are of value to their respective industries not only during times of normality, but that they are also of extraordinary value during abnormal times. "They are not only there to keep prominently before the authorities the specific war difficulties of the producers they represent, but they also facilitate and expedite the handling and marketing of the products concerned, particularly in the case of products where export plays an important part and organization is a vital factor."[21]

PRODUCTION PRICE PROBLEMS AND APPROACHES TO THEIR SOLUTION

Increased shipping costs, increased labor costs, or scarcity of agricultural supplies have tended to increase the cost of agricultural production in most of the belligerent countries. As a result the original maximum prices fixed for many farm products tended to become unremunerative after a few months, and danger of reduced production resulted. In some instances on the continent of Europe enforcement of maximum prices evoked opposition on the part of farmers and merchants who resisted delivery of their products. Growers in various localities have shown a tendency to refrain from delivery of their forage crops to the government. In other instances the government price for particular commodities was not high enough to bring about the production increase desired. Compulsory methods to increase production have not met with success when the fixed prices have not been high enough to encourage planting of the needed crops.

Guaranteed Price Increases

Since farmers have not been disposed to change from one crop to another without assurance of higher prices, and since maximum production could not be expected without remunerative prices to agricultural producers, governments have in many cases advanced the fixed prices for agricultural commodities. In the United Kingdom price adjustments and additional subsidies were granted for many products, and the Government increased its purchases of products direct from the grower. Maximum wholesale and retail prices for potatoes were advanced in the United Kingdom to compensate growers for higher costs of production and marketing, due chiefly to higher wages, and for the same reason a new level of prices became effective July 1, 1940, for wheat, oats, milk, and pigs.

During 1940 commodity pools in Italy continued to sell their limited stocks at the 1939 price level. The farmers, on the other hand, received better prices than in 1939, the grower of wheat, corn, rice, and oats receiving an average increase of

[21] "Annual Report of the Department of Agriculture and Forestry of the Union of South Africa," *Farming in South Africa*, December 1940, p. 446.

20 percent. The difference between the purchasing price paid by the pool to the farmer and the selling price received by the pool is made up by the Government. This action is based on the Italian Government's policy of precluding an increase in the cost of living and of increasing the domestic supply. These price increases to farmers were evidently intended to encourage the planting of grains, to insure the delivery of crops to the government pools, and to discourage the withholding of grain for private speculation.

The National Socialist price policy for farm products has been calculated to stimulate German production of the commodities needed during the war. Thus the announcement of new price increases for butter and milk were followed by an urgent plea by Field Marshall Goering for greater deliveries of dairy products and the threat that the new prices would be cancelled if total milk consumption on German farms was not reduced by two-thirds.[22] In order to compensate farmers for the increased costs of fattening hogs with the types of feedstuffs now available, the German authorities have increased the market price of hogs for slaughter by approximately $1.10 per hundred pounds. At the same time the necessity of a rise in consumer prices was precluded by an order of the Reich Minister of Finance reducing the slaughter tax by $2.40 per hog.

With the approval of the Central Price Office - established May 10, 1939 - the Privileged Grain Company for Bohemia and Moravia, which succeeded the former Czechoslovak Grain Company, fixed the purchasing prices and terms of the 1940 harvest for domestic wheat, rye, barley, and oats. The prices for the 1940 season were considerably above those of the 1939 season. The Bulgarian Grain Monopoly's purchasing prices for the 1940 crops of wheat, rye, sunflower seed, and corn represented an increased return of about 25 percent to the producers. The purpose of this action was to equalize the prices of farms products and of manufactured goods, the disparity of which had become very pronounced.

Price increases have been repeatedly resorted to in Japan in order to maintain production of rice and other prime necessities to meet military and consumer needs. In Manchuria bonuses above the 1939-40 fixed prices on wheat, rice, soybeans, and corn were announced in September 1940 in order to obtain early deliveries of these products. In Australia prices of domestically produced agricultural products have been separated from overseas quotations as far as possible and guaranteed at a level high enough to encourage domestic production of essential commodities. When the fixed prices are not sufficient to encourage production of supplies ample to meet the quotas specified in the trade agreements with the United Kingdom, the Dominions have increased the guaranteed price, or announced subsidy payments to producers.[23]

Control of Agricultural Production Costs

To the farmer the prevention of rising costs of agricultural production is one of the most important phases of price control. If a maximum price is fixed for agricultural commodities, costs of production must be kept in line. Agricultural committees and boards have been instituted in various countries to prevent rising costs of feed, seed, fertilizers, insecticides, and agricultural machinery. The stabilization

[22] Franklin, Harry L., "Wartime Agricultural and Food Control in Germany," *Foreign Agriculture*, April 1940, p. 218.

[23] See section on "Fulfillment of Export Quotas under Purchase Agreements," p. 296.

of the prices of feedstuffs, fertilizers, and farm machinery has been considered especially important in the effort to keep down the cost of production. The French, British, German, and Spanish Governments took steps to keep down the costs of all these items. In order to preclude the necessity of immediate upward revision of prices for beef, pork, and mutton the Government of the United Kingdom soon after the beginning of war fixed the prices for a wide range of animal feedstuffs at approximately the level prevailing immediately before the outbreak of war.

In Switzerland seed prices and prices to be paid for agricultural products were fixed before planting was begun, as a part of the Government's effort to increase grain production in the growing season of 1941.[24] In Yugoslavia efforts to increase the production of oilseeds have taken the form of two different types of price control: (1) the distribution of seed at minimum prices or even free of charge; and (2) a guaranteed price to growers for seed marketed. In Bohemia and Moravia the authorities have attempted to stimulate production by effecting a reduction in the prices of fertilizers, among other measures, and have made available supplies of first-quality sugar beet seed for increased sowings.

The wartime demand for chemicals for military use that may also be needed as fertilizers has resulted in control over fertilizer prices. Maximum prices are fixed, and strict control over distribution is exercised. Measures taken to make the control more effective have included rationing, licensing, and the required submission of estimates of needs. Price changes or reduction of rations have nevertheless been necessary in even the larger belligerent countries, where much precaution has been exercised in order to assure the fertilizer supply.

In Canada an Agricultural Supplies Board, composed of six officers of the Department of Agriculture, concerns itself with problems of agricultural production and marketing. Its work, particularly with respect to methods of holding down production costs, complements that of the Wartime Prices and Trade Board.

Fulfillment of Export Quotas under Purchase Agreements

Purchase agreements for the delivery of certain quotas of farm commodities at a fixed price involve problems of fulfillment, particularly in a democratic system that allows freedom of production. The Canadian Government thus refrained from concluding an agreement for the sale of butter because, among other reasons, the price offered would not have been high enough to satisfy domestic producers. Though a satisfactory price had been agreed upon, the diversion of dairy production from cheese to butter might have created difficulties in fulfillment of the cheese agreement quotas.

Governments of democracies use such measures as price control to encourage or discourage production of farm commodities, according to the need in the war effort. The Canadian Wartime Prices and Trade Board was thus given power to fix maximum prices for butter on November 13, 1940; and from December 28, 1940, until May 1, 1941, a maximum price was in force, one purpose of which was to increase production of cheese.

In order to meet the obligatory quotas Canadian producers have been given various types of government aid. Suggestions have been made by the Canadian Agricultural Supplies Board for the utilization of low-price substitute feedstuffs. The Dominion

[24] *Foreign Crops and Markets*, May 5, 1941, pp. 643-644.

Government also reduced transportation costs for feedstuffs to producers in order to keep down the cost of production. This, however, was not sufficiently attractive to producers, and the Dominion Government resorted to the use of subsidies in production of cheese and bacon to aid in fulfillment of the quotas. In addition to the 14.4 cents per pound for cheese decreed under the 1941-1942 marketing agreement, the Dominion Government pays a subsidy of 0.6 cents per pound on ordinary cheese exports and a premium of 2 cents per pound for high-quality cheese. The Province of Quebec also pays a subsidy of 2 cents per pound, making a return of 19 cents per pound for 94-score cheese, f.o.b. Montreal. The same price is paid in Ontario, since that Province also pays a subsidy of 2 cents per pound.

Anxiety was also felt by Canadian hog producers. The Bacon Board, created by an Order-in-Council to administer the Bacon Agreement, therefore raised the price by $1.00 per hundred pounds for all pork products put into cure for export purchased on and after May 2, 1941. The Board, through control of prices and its authority over packers, may facilitate the production, accumulation, and delivery of the types of pork provided for in the agreement.

A Dairy Products Board was established to govern the marketing and export of dairy products, including cheese, from Canada to the United Kingdom. It has been necessary for this Board to go somewhat farther than has the Bacon Board. It has prohibited the export of Canadian cheese in quantities exceeding 50 pounds to countries other than the United Kingdom, and requires export licenses.[25] The Board also prescribes the type of cheese which shall be manufactured. In order to divert milk from production of commodities for local use, such as ice cream, to factories for production of cheese for Britain, the powers of the Board were enlarged by an Order-in-Council dated May 17, 1941.[26] The Board is enabled by this order to regulate fully the export of dairy products to other countries; to require that a dairy product be delivered for manufacture into a particular product; and to limit or restrict the quantity of any dairy product that may be accepted, purchased, manufactured, or processed by any person.

Correlation of Domestic Guarantees and International Quotas

Price control in the present war has reached its highest stage of development in the correlation of the British policy of holding down domestic consumer prices and the assurance by the British Dominions of reasonable prices to their producers. The connecting link is the British-Dominion purchase agreements, which endeavor to guarantee a supply to satisfy consumption requirements in the United Kingdom at a reasonable price and to assure a market for Dominion products, also at a reasonable price. The importance of the reciprocal guarantees to producers and consumers is illustrated in the cases of dried fruit, dairy products, and sugar.

The successful operation of the Dried Fruit Scheme in the Union of South Africa (page 293) is dependent on the lump purchases of dried fruit by the British Government. The New Zealand Government, through the Dairy Export Control Board established in 1923, guarantees minimum prices for certain dairy products to New Zealand farmers. The agreement for the wartime purchase of New Zealand dairy products by the United Kingdom,

[25] *Foreign Crops and Markets*, August 26, 1940.
[26] *The Canada Gazette*, (Extra) No. 122, May 17, 1941.

announced November 17, 1939, provides for the purchase of certain quantities at an agreed price. The arrangement includes a provision to the effect that it shall continue for the duration of the war and a reasonable period thereafter.[27]

The international purchases of sugar are linked with one of the most far-reaching of the assurance schemes developed so far; namely the Australian Sugar Agreement for 1941-1946 between the Australian Commonwealth and Queensland Government.[28] This new agreement is substantially the same as that of 1935, which expires August 31, 1941. Government control over domestic prices, domestic production, importation, and exportation of sugar is extended for another five-year period.

The whole Australian surplus of sugar for export is sold to the British Ministry of Food. Soon after the beginning of the war the British Government arranged for purchase of the surplus of the sugar-producing countries of the Empire, chief of which are Australia, Fiji, and the British West Indies, and undertook to sell Canada adequate supplies to satisfy Canadian needs. The British Ministry of Food delivers, at cost, sugar purchased from the Empire producers to the Canadian Sugar Administrator, who resells the stocks to Canadian refineries. Additional assurance to Australian producers and to British and Canadian consumers is contained in the provision of the original British-Australian purchase agreement that its existence shall extend during the war and that the price of sugar shall be agreed upon annually.

In some instances it may be considered necessary for the British Government to maintain prices for consumers lower than the cost of commodities under a purchase agreement. The Dominion Governments, on the other hand, may pay more to producers than is received under the purchase agreement. This would not be possible if both supply and market were not assured. Thus, consumers in the United Kingdom are guaranteed, by their Government, an adequate supply at a reasonable price, and Dominion producers are guaranteed a market for their products at a reasonable price.

The stabilization effected by the purchase agreements in countries where these commodities are produced and in countries where they are sold must have a stabilizing effect on the production and marketing of those commodities in the rest of the world. Producers in other countries are faced with the fact that the domestic market in the British Dominions and certain parts of the market in the sterling area is being satisfied as far as possible by British Empire producers.

The total effect of the increasing apportionment of world markets under international marketing agreements, bilateral or multilateral, is to stabilize the channels of trade and the price of commodities and to necessitate the adjustment of domestic production in each country to its share in the world market.

Thus, under very difficult production and marketing conditions, a stabilizing function in international trade is being fulfilled by agreements between governments and their domestic producers and by international agreements between governments representing producers and other governments representing consumers.

[27] *Foreign Crops and Markets*, Feb. 24, 1940, p. 221.

[28] The agreement was ratified by the Australian Federal Parliament in the form of a bill, assented to May 29, 1940. See *Sugar Agreement, an Act to Approve An Agreement Made Between His Majesty's Government of the Commonwealth of Australia and His Majesty's Government of the State of Queensland*, No. 21, 1940.

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IMPACT OF WAR ON THE JAPANESE COTTON TEXTILE INDUSTRY . . . . .

By C. H. Barber*

The present wars in Europe and Asia, unlike the World War of 1914-1918, have brought no benefit to the Japanese cotton textile industry. On the contrary, production of cotton goods has declined during the war period to less than 50 percent of that in the pre-war years of 1936 and 1937. Exports of cotton textiles declined by about 12 percent during the first year of the European war, while government restrictions limited domestic consumption to about 40 percent of peacetime requirements. A review of the underlying causes of this reduction reveals that an important part of Japan's former export trade in cotton goods may be permanently lost. It is not intended to imply that war has been the sole cause of the decline but rather that it has hastened and accentuated a development that appeared inevitable even before the outbreak of hostilities in China (July 7, 1937).

PLACE OF THE INDUSTRY IN THE JAPANESE ECONOMY

Cotton manufacturing has been one of Japan's leading industries for the past two decades. It received its first important impetus during the war of 1914-1918, when competition from European goods in world markets, particularly in China and the Netherlands Indies, was weakened by high costs and shipping difficulties. Expansion of the industry continued steadily in subsequent years, especially after Japan abandoned the gold standard in December 1931. Installation of new power equipment and the adoption of many measures designed to reduce the cost of production gave Japanese cotton manufacturers a further advantage in export markets.

In 1929 about 202,000 workers were employed in cotton-spinning and weaving mills affiliated with the Japan Cotton Spinners' Association, representing more than 95 percent of the cotton spinning industry in Japan and 20 percent of the weavers (about 40 percent in 1937). This total reached 209,000 in 1937 despite increased use of automatic equipment. If employees in cotton-dyeing plants and other independent establishments associated with cotton manufacturing were included, the total would represent 20 to 25 percent of all factory-employed labor in Japan. The cotton-spinning industry, with more than 12 million spindles, in 1937 represented a capital investment of about 700 million yen (currently $165,000,000), or approximately 5 percent of the total capital of all Japanese industrial companies. Throughout most of the period under consideration the industry was characterized by heavy investments in mill equipment, high productivity, mounting exports, and large profits.

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DECLINE OF THE INDUSTRY

In recent years the cotton textile industry has been losing its first-rank status because of a number of factors of varying importance. One of these, competition from artificial fibers, is perhaps least important; the other two significant factors are Japan's four-year-old undeclared war on China and the outbreak of the European war.

Competition from Artificial Fibers

During the ten or twelve years prior to 1938 development of the rayon and staple-fiber industries in Japan, although phenomenal, was not at the expense of cotton manufacturing. Rayon yarn production in Japan rose from 5,000,000 pounds in 1926 to 334,350,000 in 1937, but dropped to 209,600,000 in 1938, the first full year of the war with China. This decline was not attributed entirely to the war, however, because in that year a general business recession was in evidence throughout all industrial countries. During the same years the output of cotton yarn increased from 2,608,000 bales (of 400 pounds) to 3,966,000, and then declined to 2,859,000 (including cotton-rayon mixed yarns). The production of staple fiber (rayon yarn cut into fiber lengths for spinning) was increased from 550,000 pounds in 1932 to 174,755,000 in 1937, and in 1938 showed another large increase to 375,000,000 pounds. This increase resulted partly from the mixing regulations instituted by the Government on February 1, 1938, requiring that all cotton goods sold on the domestic market contain at least 30 percent staple fiber. Loss of export markets and a shortage of power and imported raw materials caused a reduction in 1939 to 309,500,000 pounds.

Except in the case just mentioned, production of artificial fibers has not resulted in serious loss to the cotton textile industry in Japan since 1938, chiefly because these industries have had difficulties of their own, associated with wartime conditions. Rayon and staple-fiber goods sold on the domestic market are derived from the relatively low-grade wood pulp obtained in Japan and Manchuria, whereas higher-grade pulp for export textiles is normally imported from the Scandinavian countries, Canada, and the United States. Supplies from Scandinavia have now been cut off by war in Europe; most of Canada's surplus is needed in England; and prices of the American product have risen.

The production of artificial fibers in Japan has been handicapped by many of the conditions adversely affecting the cotton textile industry, such as increased costs of production, application of the "link system" (balancing imports of raw materials against exports of finished goods), currency depreciation abroad, and the imposition of import restrictions in some of Japan's leading rayon export markets, particularly India and Mexico. A shortage of caustic soda used in the manufacture of rayon has existed for over a year. Disruption of transportation facilities in North China and Italian Somaliland, two principal sources of salt imports, was the chief cause of the shortage, which has been partly alleviated recently by increased imports from North China.

Increased competition from other countries was also a depressing factor. Sales of Italian rayon goods in three of Japan's best markets (India, Mexico, and China, particularly in Shanghai) rose rapidly in recent years and by 1939 were almost equal to Japanese sales. German goods had also made serious inroads on these three markets, as well as several others, before the outbreak of war in Europe. Because of the present unsatisfactory status of the Japanese textile industry and the unfavorable

reaction of world trade to wartime conditions, Japanese exporters are unable to take advantage of the temporary elimination of German and Italian goods from world markets.

Effect of the War in China

The first two years of war in China contributed toward a gradual decline in the Japanese textile industry, both in production and exports. Cost of production has risen as the war continued, sales of cotton goods on the domestic market have been severely restricted since February 1938, and exports have declined. Exports of cotton piece goods and yarn from Japan during 1936-37 represented about 40 percent of the raw cotton consumed by Japanese mills in that year. The restrictions imposed by the Government in 1938 to reduce consumption of imported materials caused a sales reduction in Japan of about 1,700 million square yards annually, equivalent to approximately 950,000 bales of raw cotton. This development forced cotton manufacturers to depend to a much greater extent on export outlets. But increased costs resulted in the loss of the traditional Japanese advantage of low-cost goods for sale on foreign markets. Late in 1940 prices of grey goods in Japan rose from the 3½-cent level of the preceding year to about 5 cents per square yard.

Despite concentrated efforts to maintain export trade, exports of cotton piece goods gradually declined from 2.6 billion square yards in 1936-37 to 1.9 billion in 1939-40 (August-July). Mill consumption of raw cotton showed a proportionate decline from 3,831,000 bales in 1937 to 2,546,000 bales in 1939.

TABLE 1.—*Japanese mill consumption of raw cotton, January-June 1940, with comparisons*
[In bales of 478 pounds net]

PERIOD	AMERICAN	INDIAN	BRAZILIAN	EGYPTIAN	CHINESE	OTHER GROWTHS	TOTAL
	1,000 bales	*1,000 bales*	*1,000 bales*	*1,000 bales*	*1,000 bales*	*1,000 bales*	*1,000 bales*
1934 Jan.-June	934	514	(1)	46	23	74	1,591
July-Dec.	859	759	5	65	1	62	1,751
1935 Jan.-June	881	727	(2)	76	(2)	83	1,767
July-Dec.	874	681	1	66	9	66	1,697
1936 Jan.-June	800	701	5	66	37	131	1,740
July-Dec.	641	812	99	67	8	140	1,767
1937 Jan.-June	775	833	38	101	41	137	1,925
July-Dec.	674	850	163	80	28	111	1,906
1938 Jan.-June	593	541	56	67	176	75	1,504
July-Dec.	405	420	182	59	123	44	1,233
1939 Jan.-June	503	442	112	71	62	93	1,283
July-Dec.	271	456	207	72	123	134	1,263
1940 Jan.-June	468	339	74	64	102	108	1,155

[1] Less than 500 bales. [2] Not shown separately. Compiled from Japanese trade sources.

Effect of the European War

When the European war broke out in September 1939 a large part of the Chinese textile market had already been lost to Japanese exporters, either through Japanese

embargo or military activities in China. All this had weakened the ability of the industry to withstand the sharp adverse reactions of world trade to the European conflict. In addition, about two-thirds of Japan's export trade in cotton textiles was at this time conducted in currencies linked to the British pound sterling. Within a month after the outbreak of war British exchange rates were from 15 to 20 percent below peacetime rates, and after the invasion of France in May 1940 they reached levels about 30 percent below par. The value of the yen declined by about 15 percent during the first year of the war in Europe. Thus importers in British, French, Belgian, and Netherlands empire areas were theoretically confronted with a price rise of about 15 percent, in terms of their own currencies, for goods imported from Japan. As wartime protective measures these governments also set up exchange controls and import restrictions that retarded trade with non-Empire areas.

Loss of Textile Export Markets and the "Link System"

The sharp decline in sales of cotton goods to these "sterling" markets since early 1940 has been the most serious loss suffered by the Japanese cotton industry and is not likely to be overcome while war in Europe continues. The entry of Italy into the war and the extension of the British blockade to the Mediterranean area constituted another blow to the export trade. Important markets for Japanese goods in Egypt, the British and French colonies in North Africa and Asia Minor, and, to a less extent, in the Balkans were drastically reduced or eliminated by the blockade. The loss of export textile trade is especially serious for the Japanese cotton industry because under wartime restrictions the domestic market can absorb only a small part (15 to 20 percent) of potential mill output.

TABLE 2.—*Japanese exports of cotton piece goods, September 1939-March 1940, with comparisons*

COUNTRY OF DESTINATION	SEPTEMBER-AUGUST					SEPT.-MARCH[1]	
	1934-35	1935-36	1936-37	1937-38	1938-39	1938-39	1939-40
	Million sq. yds.	*Million sq. yds.*	*Million sq. yds.*	*Million sq. yds.*	*Million sq. yds.*	*Million sq. yds.*	*Million sq. yds.*
British India	500.8	526.2	309.6	450.4	569.3	370.9	285.3
Netherlands Indies	384.7	336.4	483.1	209.6	331.6	173.9	211.6
Egypt and other Africa	375.9	401.6	329.9	328.3	393.0	233.4	216.5
Manchuria and Kwantung	249.7	299.1	325.9	315.4	18.8	13.5	20.5
China and Hong Kong	116.5	99.7	123.5	131.3	73.3	26.0	34.0
Philippine Islands	93.5	48.2	55.1	39.7	31.8	17.8	24.8
United States, including Hawaii and Puerto Rico	49.0	62.1	162.6	24.7	43.5	21.9	67.9
Others[2]	938.3	883.8	815.9	819.7	918.6	513.4	543.1
Total	2,708.4	2,657.1	2,605.6	2,319.1	2,379.9	1,370.8	1,403.7

[1] Exports by countries not published after March 1940. Total for 1939-40 2,080.6 million square yards (*Oriental Economist*, February 1941).

[2] For a more detailed list of countries to which Japan exports cotton piece goods, see *Foreign Crops and Markets*, June 3, 1939.

Compiled from *Monthly Return of the Foreign Trade of Japan.*

Under the impact of these developments many Japanese cotton-mill owners have recently diversified their investments and branched out into other industries, some of which are totally unrelated to cotton-spinning and weaving. They were compelled to do so because profits were reduced to a minimum, and in some cases cotton textiles were exported at prices below the cost of production in order to retain export markets and obtain much-needed foreign exchange.

The industry, however, could not continue exporting merely for the sake of securing foreign exchange. Hence the Japanese Government stepped in and instituted the so-called "link system" (July 1, 1938). The purpose was to balance the value of raw-cotton imports against that of cotton goods exported, in order to conserve foreign exchange. By tacit agreement between the Government and cotton textile exporters, the policy was somewhat relaxed in the latter part of 1939 and in 1940 for two principal reasons: (1) because of hostilities in Europe, Japanese textile exporters anticipated a larger share of world textile trade in 1940; and (2) for this reason, importers were allowed to accumulate larger stocks of raw materials while the United States export subsidy was in effect. Permits for raw-cotton imports were issued on goods earmarked for export and put into stock rather than on actual exports alone, as originally planned. Anticipated improvements in the export trade did not materialize, however, for reasons already mentioned, so that surplus stocks of piece goods and yarn continued to grow. Piece goods stocks are believed to have reached 1.5 billion square yards by the end of 1940.

The link system also brought drastic restrictions in exports of cotton manufactures to all yen bloc markets because such exports do not yield the foreign exchange needed to pay for raw-cotton purchases abroad. The small volume of goods released under license for sale in China and Manchuria is reported to be composed chiefly of "rejects." A movement is now under way to transfer part of the cotton-mill industry to China in order to have better access to raw-cotton supplies and to avoid some of the legal restrictions imposed on the industry in Japan.

IMPORTANCE OF JAPANESE MARKET FOR AMERICAN COTTON

These unfavorable developments in the Japanese cotton industry have contributed to the poor showing of United States raw-cotton exports in the current season. A review of United States export statistics reveals that during the seven years before the outbreak of war in China, United States exports of raw cotton to Japan averaged 1,744,000 bales annually, while shipments to Great Britain averaged 1,260,000 bales. Great Britain has regained first place in three of the last four years.

Under the stimulus of the United States cotton export subsidy and Japanese anticipation of a greater share in world textile trade, United States cotton exports to Japan rose to 941,000 bales in 1939-40, as compared with 719,000 and 896,000 for 1937-38 and 1938-39, respectively. Current market reports received from Japan indicate that the total for 1940-41 may not exceed 100,000 bales. During the nine months ended April 30, 1941, total shipments to Japan amounted to only 71,000 bales, compared with 829,000 for the corresponding period of 1939-40.

This anticipated reduction of about 90 percent in imports of American cotton into Japan during the current season is not entirely due to reduced operations of Japanese mills; it may also be attributed to three other important factors: (1) prices

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of Brazilian cotton at Osaka, Japan, during recent months have averaged about 2 cents per pound less than those for comparable grades of American; (2) Japanese stocks of American cotton and goods made largely from American cotton are sufficient for six or seven months' production and export requirements at current low levels; and (3) the "link system" is being more strictly enforced in 1941, favoring cheaper growths in the granting of permits to importers. Consequently, total raw-cotton imports will be reduced to the current low level of piece goods exports, with most of the reduction occurring in imports of American cotton.

Imports of Brazilian cotton are expected to be about double last year's total of 220,000 bales, if transportation facilities can be provided. More than two-thirds of the Japanese purchases of Brazilian cotton are handled by Japanese firms in Brazil, which finance a large part of the production, ginning, experimental work, and export sales of cotton produced by Japanese farmers in Brazil, mostly in the State of São Paulo. This factor may influence a greater diversion from United States to Brazilian cotton, since part of the profits accruing are deposited or invested in Japan, reducing the requirements for foreign exchange. Imports of Indian cotton probably will be maintained almost at last year's level of 664,000 bales, largely because prices are relatively low and exports of Japanese cotton goods to British India are still linked informally to Japanese purchases of Indian cotton. In recent months, however, a shortage of cargo space and the demand by Indian exporters for immediate cash payments have been limiting factors in the movement of Indian cotton to Japan.

RECENT RELIEF MEASURES

In addition to the institution of the link system and restriction of the domestic sales of cotton goods, leaders of the Japanese cotton textile industry are attempting to overcome the present difficulties by three principal methods: (1) a movement to reduce costs of production and increase bargaining power abroad by amalgamation and standardization of the whole textile industry; (2) the conclusion of additional bilateral trade agreements similar to those with British India, the Philippines, and several Latin-American nations; and (3) an organized program for expanding cotton production in China.

Amalgamation of the spinning industry was completed early in 1941, but because of strong opposition by independent weavers little progress has been made with the weaving section. Reorganization of the spinning section, however, will enable the Government to exercise greater control over the industry as well as to centralize the supervision of all production and sales activities.

Japanese efforts to effect new trade treaties are directed chiefly toward the Netherlands Indies and Latin America. Bilateral agreements with Argentina, Paraguay, and several Central-American countries have already been announced, and others are contemplated. Negotiations with British India to renew the raw cotton-cotton goods trade agreement, in effect for four years ending March 31, 1941, were recently suspended because of abnormal conditions. The European war and Japan's political relations with the belligerent powers, however, may limit the possibilities for immediate trade improvements in British, French, and Netherlands empire areas.

Japanese efforts to increase cotton production in China consist chiefly of distribution of improved seed to Chinese farmers, assignment of production quotas to

local areas, and the granting of subsidies for digging additional irrigation wells. Funds were not available in time to affect the 1940 crop, however, and progress has been further hampered by lack of sufficient political control over rural areas to obtain the cooperation of Chinese farmers. Many farmers have shifted to the production of food crops because of dissatisfaction with the low cotton prices fixed by Japanese military authorities and because of their unwillingness to accept the new currency being circulated in Japanese-controlled areas of China.

The prices set by Japanese officials at the beginning of 1940 were roughly equivalent to 12.5 cents per pound for commercial purchases and 10.5 cents for military purchases. The commercial price was nearly doubled (from 105 to 200 "North China" dollars per picul) by January 1941, but because of currency depreciation the January price amounted to less than 17 cents per pound in terms of United States currency. No change was reported in the military price.

The 1940 cotton crop in China was estimated at 2,350,000 bales, only about 1 million of which entered commercial channels. The remainder was expected to be consumed by small home industries in the making of such articles as mattresses, quilts, rugs, and padded winter garments. China is capable of producing about 4 million bales of cotton annually if sufficient inducement were offered to Chinese farmers. Japan now imports from 200,000 to 250,000 bales of Chinese cotton annually, about half of which is coarse, rough cotton not suitable for spinning purposes. Under peacetime conditions and with Japanese financial and technical aid, it is entirely possible that within the next few years China could supply the Japanese textile industry with at least 500,000 bales of good-quality cotton annually. Thus far, however, Japanese efforts have met with little success, and progress will be difficult as long as present unsettled conditions continue.

CONCLUSION

The outcome of both the European and the Asiatic wars will affect the future status of the Japanese cotton textile industry. It is too early to determine the nature of this influence on post-war developments in the industry, but there are other factors that may have an important bearing on the situation regardless of political or military consequences.

Wartime disruptions of international trade have accelerated the expansion of cotton-manufacturing industries in many of Japan's best textile markets, particularly in British India, Latin America, Australia, and French Indochina. Japanese exports to some of these areas may be permanently curtailed for this reason. Indian exports are already competing with Japanese textiles in other markets in the Orient and Africa, and Indian mill owners are expanding production capacity in anticipation of further gains.

Since the World War Japanese cotton manufacturers have gained a large share of export markets, principally for the less fine "bulk-line" goods of standard constructions that were formerly supplied from Great Britain. The British Industry could not meet the low cost of production in Japan because of higher wage scales, the burden of supporting its own unemployed workers, and lack of sufficient modern equipment. Recent British Government action, however, should eliminate some of these handicaps by concentrating the industry into a smaller number of more efficient organizations, either

through amalgamation or the closing of the less efficient mills. This measure and others contemplated are expected to aid the industry in its post-war efforts to regain some of its former export trade. As a result, regardless of the outcome of the European war, Japan may meet much stronger competition from British goods, particularly in the British Empire areas.

A third important factor that will affect Japan's ability to purchase American cotton and, to some extent, other growths, is the potential loss of its silk market in the United States because of the increasing production of nylon and other synthetic fibers. The annual manufacture of nylon yarn has risen to about 8 million pounds since its introduction about two years ago, and has replaced Japanese silk by almost that amount. Japan furnishes more than 90 percent of United States silk imports, most of which is utilized in hosiery production. Normally, from 80 to 90 percent of Japan's exports of raw silk is sold in the United States (51.3 million pounds in 1938 and 36.4 million in 1940), furnishing a large part of the exchange necessary for the importation of American products. The loss of an important part of this trade appears inevitable and may cause a permanent reduction in imports of American cotton as the nylon industry continues to grow.

These difficulties may be partly offset by the increased bargaining power of the reorganized Japanese industry and the possibility that in the future much greater quantities of raw cotton may be obtained in China without the necessity of providing foreign exchange. Both factors are dependent on restoration of peacetime conditions at home and abroad.

In evaluating all the factors involved, it appears that the Japanese cotton-textile industry has a less-than-even chance of regaining its former volume of export trade in the near future. Relatively high prices are the chief impediment to imports of American cotton at present, but even with a more favorable price ratio these imports are not likely to regain their pre-war volume without a renewal of cotton textile exports from Japan and a more balanced export-import trade with the United States.

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